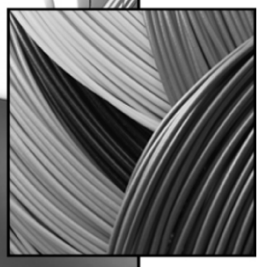
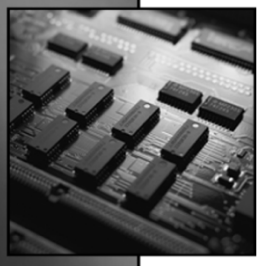
VOIP GATEWAY





SIP

- 2PORTS
- 4PORTS
- 8PORTS

LINE EXTENSION

OPERATION

MANUAL

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Operation Manual

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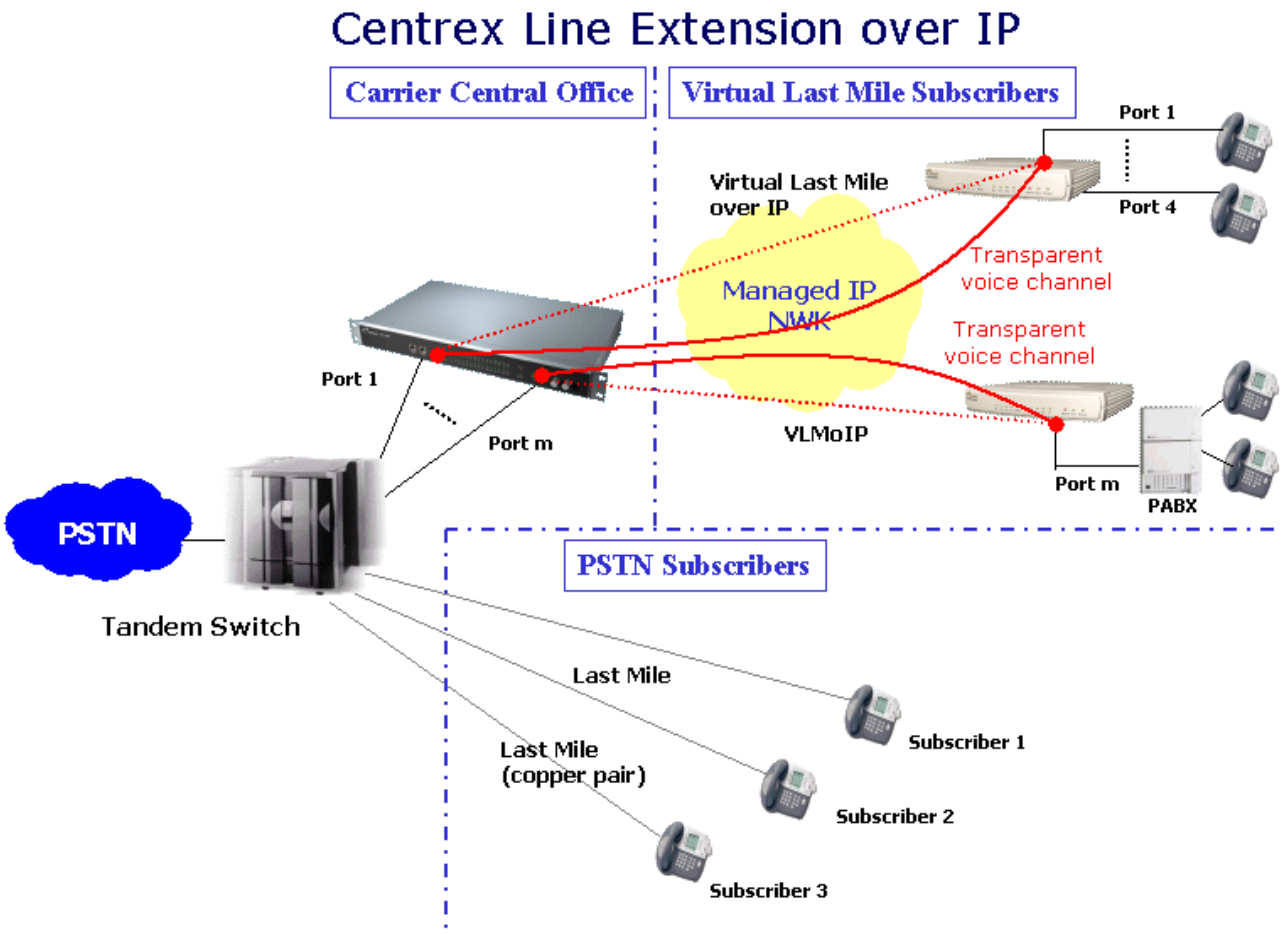
1 Introduction

Product Overview

- Fastest way to launch VoIP service, **NO need for Soft Switch, BILLING, or change in existing OSS**.
- Low initial investment
- Provide VoIP service over subscriber's existing broadband connection
- One-to-one port mapping (P-2-P or P-2-mP) from **Centrex FXO** to **Client FXS**, no change in existing dialing plan



Product Features

- SIP (RFC 3261) compliant
- Supports 2 / 4 / 8 simultaneous FAX / Voice calls (port number differs between models)
- 4 Ethernet switch ports with IP sharing functions
- Optional server enables small businesses to build up private VoIP network (SIP model)
- QoS support guarantees voice bandwidth in a busy network
- Supports IP TOS (Type Of Service)
- Internet gateway functions: DHCP server, NAT, Virtual Server, DMZ, IP/PORT/MAC filtering
- T.30 (G III) / Real Time T.38 / Secured T.38 Fax Relay
- Feasible for Fixed IP address or dynamic IP address network (PPPoE / DHCP client, support DDNS)
- Configurable Hot Line feature
- Supports IP-to-PSTN / PSTN-to-IP applications
- Life-Line support (IP / power failure over relay)
- NAT traversal - STUN and UPnP (optional)
- Pass through NAT
- Call Detailed Records (CDR)
- Web-based firmware upgrade
- Caller ID Delivery
- Easy Configuration by IVR and Web-based GUI
- Greeting message
- Echo Cancellation: G.168 compliant
- Voice Activity Detection (VAD) & Comfort Noise Generation (CNG)
- Dialing: DTMF, PULSE (optional)
- Signaling Protocol: Loop Start
- Adaptive Jitter Buffer and Programmable Gain Control
- Internet Gateway Functions : DHCP server, NAT, Virtual Server, DMZ, IP/PORT/MAC filtering

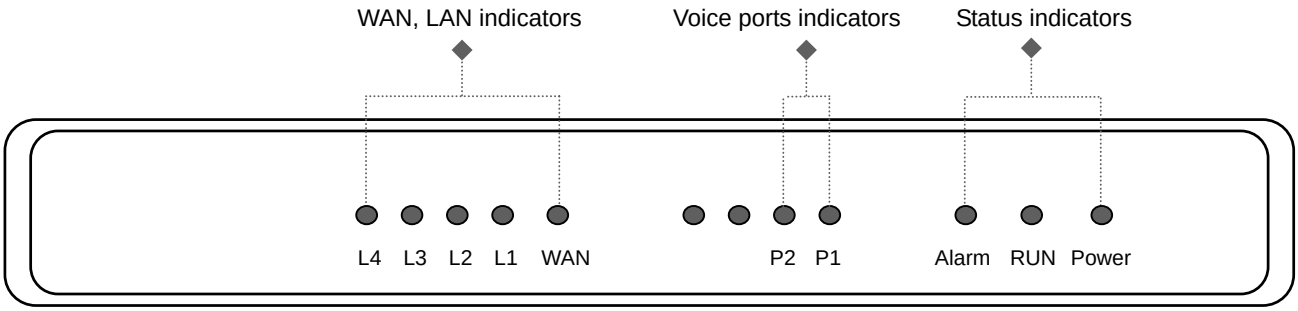
CALL features (optional)

- Call hold
- Call waiting
- Call forward
  - Unconditional (follow me)
  - Busy forward
  - No answer forward
- Call transfer

Hardware Description

2 ports gateway model : 2S / 2O

Front Panel



- Power Indicator: Green light indicates a normal power supply.
- Run Indicator: Blinking green light indicates normal operation.
- Alarm Indicator: When the system starts up, the red light will blink. It also indicates the gateway's abnormal operation.
- P1 – P2 stands for Port 1 – Port 2 (Line 1 – Line 2)
- WAN stands for the WAN Port Indicator.
- L1 – L4 stands for the LAN Port Indicator.

✓ **When starting up the system, the Alarm, Run, and Power indicators will light up. After about 40 seconds, the Alarm indicator will go off, the Run indicator will blink in green, and the Power indicator will stay green under normal operational conditions. If the Alarm indicator continues to blink, it means the system is currently communicating with ISP and has yet to obtain an IP address.**

✓ **When the WAN is connected, the WAN indicator will light up in green and if data is being transmitted over the Internet, the indicator blinks in green and orange.**

Rear Panel

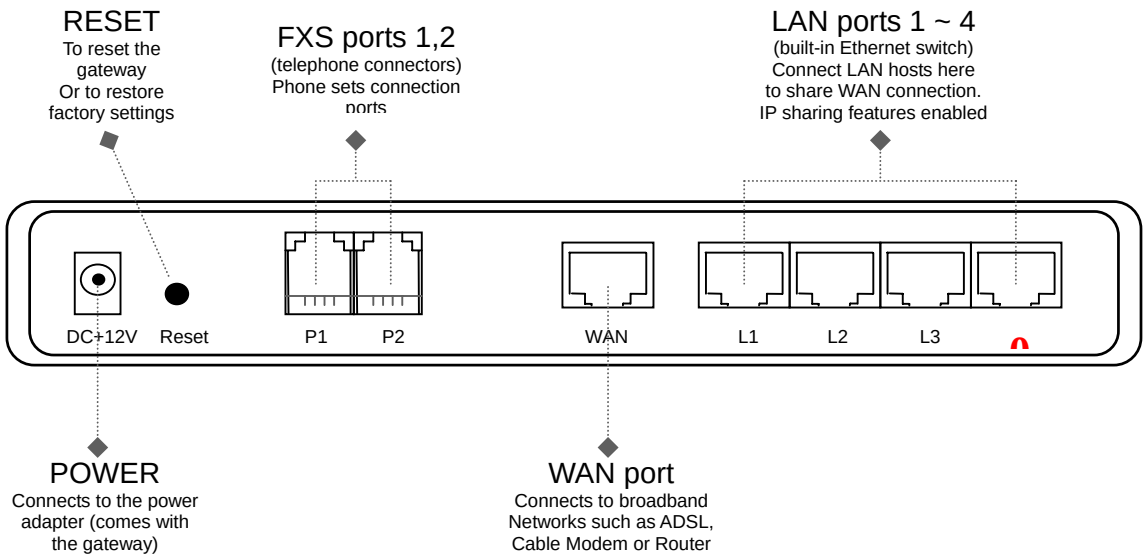
2S **:** P1-P2 are all telephone ports (FXS) to be connected to a telephone set or PBX co ports (PSTN ports).
2O **:** P1-P2 are line ports (FXO) to be connected to a PSTN (telephone lines from a PSTN).

NOTE: Do not connect FXS ports to each other. Also, do not connect any FXS port directly to a PSTN line or internal PBX. If any of these are done, your 4S may be damaged.

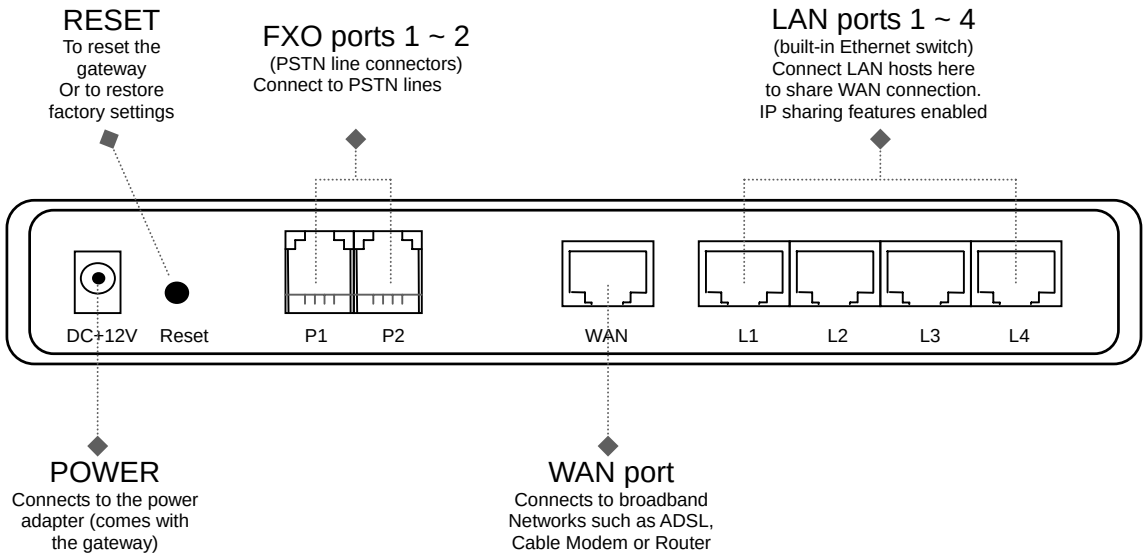
Please use the power adapter comes with VoIP Gateway. If using adapters other than the one comes with VoIP Gateway, it may cause problems and will affect the warranty of the product.

Restore to factory default: (IP address, User's. Name and Password)
(1) Plug off the power.
(2) Press reset (do not to let off reset button).
(3) Plug in the power (do not to let off reset button).
(4) After 6 sec. let off the reset button, and it will restore factory settings.

2S Model (2 FXS ports)

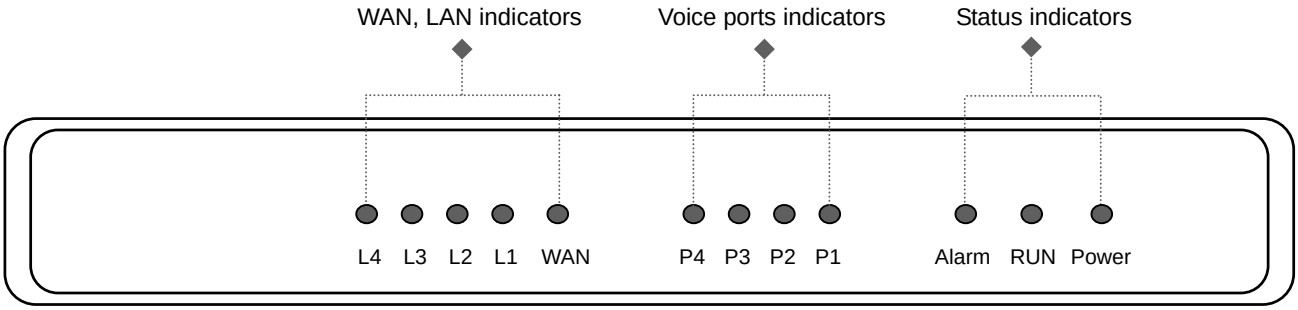


2O Model (2 FXO ports)



4 ports gateway model : 4S / 4O

Front Panel



- Power Indicator: Green light indicates a normal power supply.
- Run Indicator: Blinking green light indicates normal operation.
- Alarm Indicator: When the system starts up, the red light will blink. It also indicates the gateway's abnormal operation
- P1 – P4 stands for Port 1 – Port 4 (Line 1 – Line 4)
- WAN stands for the WAN Port Indicator.
- L1 – L4 stands for the LAN Port Indicator.

✓ **When starting up the system, the Alarm, Run, and Power indicators will light up. After about 15 seconds, the Alarm indicator will go off, the Run indicator will blink in green, and the Power indicator will stay green under operational conditions. If the Alarm indicator continues to blink, it means the system is currently communicating with ISP and has yet to obtain an IP address.**

✓ **When the WAN is connected, the WAN indicator will lights up in green and if data is being transmitted over the Internet, the indicator blinks in green and orange.**

Rear Panel

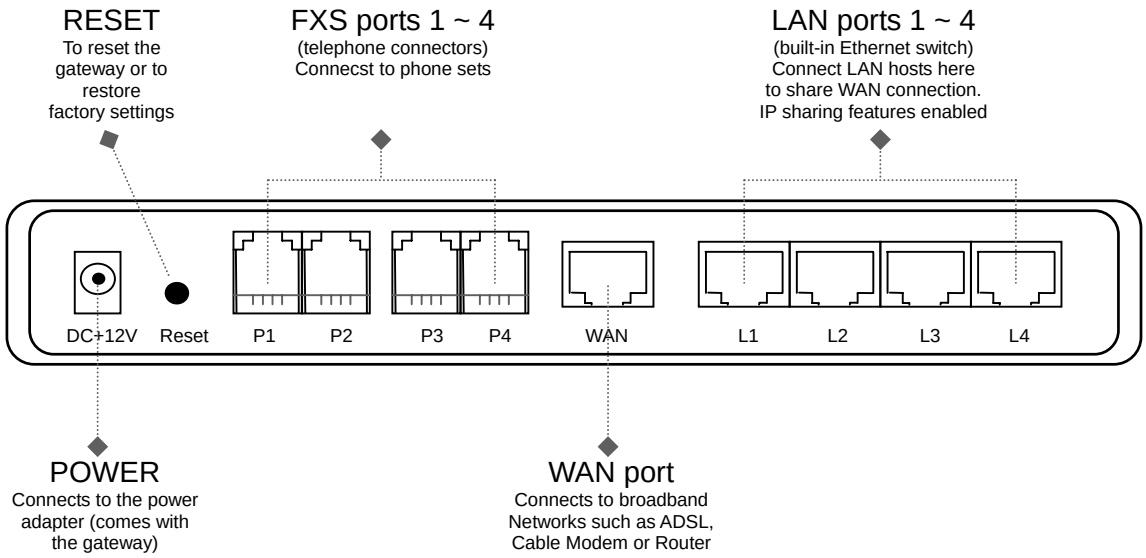
4S **:** P1-P4 are telephone ports (FXS) to be connected to a telephone set or PBX co ports (PSTN ports).
4O **:** P1-P4 are line ports (FXO) to be connected to a PSTN (telephone lines from a PSTN).

NOTE: Do not connect FXS ports to each other. Also, do not connect any FXS port directly to a PSTN line or internal PBX. If any of these are done, your 4S may be damaged.

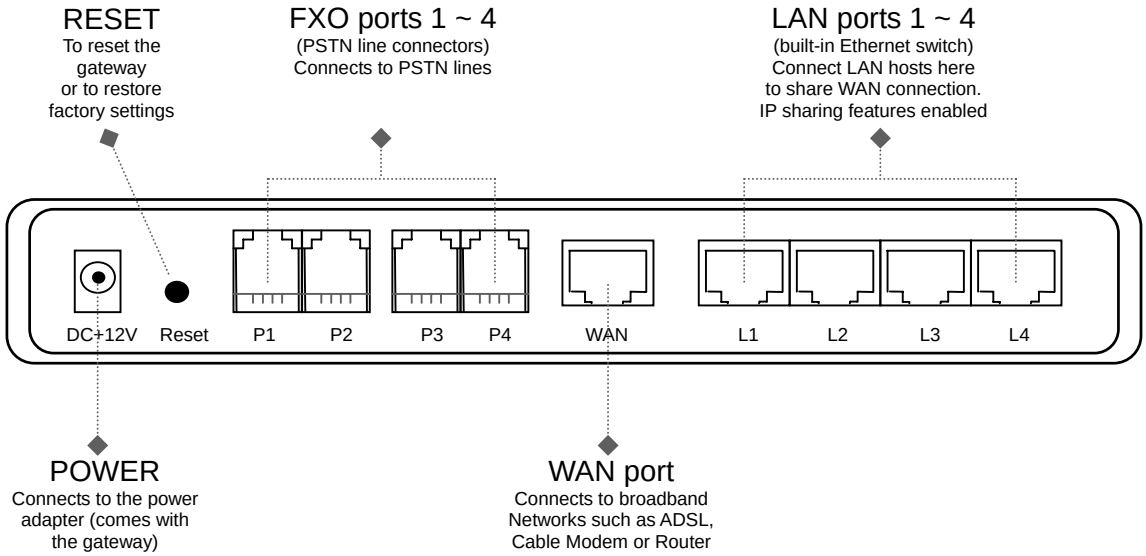
Please use the power adapter comes with VoIP Gateway. If using adapters other than the one comes with VoIP Gateway, it may cause problems and will affect the warranty of the product.

Restore to factory default: (IP address, User's. Name and Password)
(1) Plug off the power.
(2) Press reset (do not to let off reset button).
(3) Plug in the power (do not to let off reset button).
(4) After 6 sec. let off the reset button, and it will restore factory settings.

4S Model (4 FXS ports)

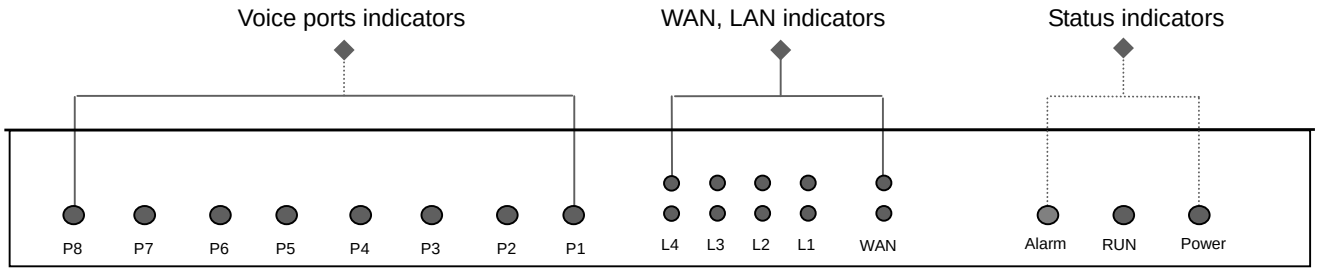


4O Model (4 FXO ports)



8 ports gateway model : 8S / 8O

Front Panel



- Power Indicator: Green light indicates a normal power supply.
- Run Indicator: Blinking green light indicates normal operation.
- Alarm Indicator: Red light blinks every time when the system starts up, or indicates abnormal operation of a Gateway.
- P1 – P8 stands for Port 1 – Port 8 (Line 1 – Line 8)
- WAN stands for the WAN Port Indicator.
- L1 – L4 stands for the LAN Port Indicator.

✓ **When starting up the system, the Alarm, Run, and Power indicators will light up. After about 15 seconds, the Alarm indicator will go off, the Run indicator will blink in green, and the Power indicator will stay green under operational conditions. If the Alarm indicator continues to blink, it means the system is currently communicating with ISP and has yet to obtain an IP address.**

✓ **When the ethereal cable is connected, the Link indicator will light up and if data is being transmitted over the Internet, the act indicator will blink.**

Rear Panel

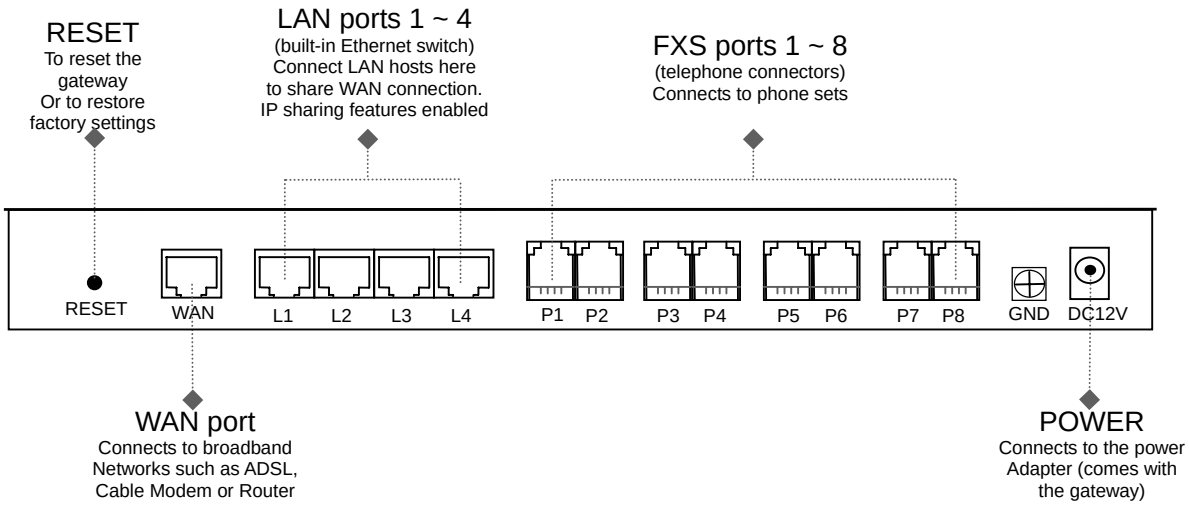
8S **:** P1-P8 are all telephone ports (FXS) to be connected to a telephone set or PBX CO ports (PSTN ports).
8O **:** P1-P8 are line ports (FXO) to be connected to a PSTN (telephone lines from a PSTN).

NOTE: Do not connect FXS ports to each other. Also, do not connect any FXS port directly to a PSTN line or internal PBX. If any of these are done, your 4S may be damaged.

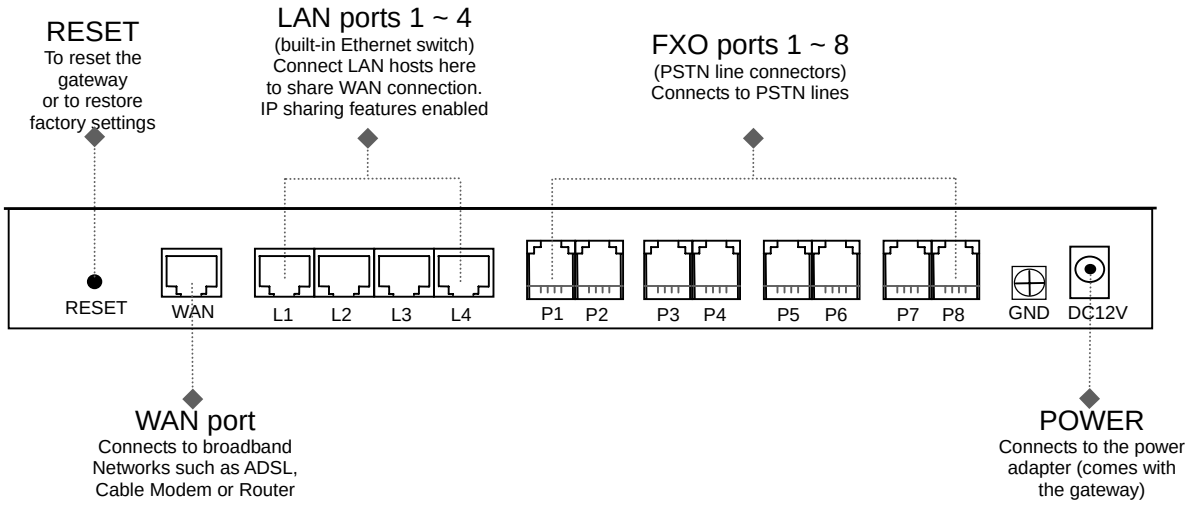
Please use the power adapter comes with VoIP Gateway. If using adapters other than the one comes with VoIP Gateway, it may cause problems and will affect the warranty of the product.

Restore to factory default: (IP address, User's. Name and Password)
(1) Plug off the power.
(2) Press reset (do not to let off reset button).
(3) Plug in the power (do not to let off reset button).
(4) After 6 sec. let off the reset button, and it will restore factory settings.

8S Model (8 FXS ports)


RESET
To reset the gateway Or to restore factory settings
LAN ports 1 ~ 4
(built-in Ethernet switch) Connect LAN hosts here to share WAN connection. IP sharing features enabled
FXS ports 1 ~ 8
(telephone connectors) Connects to phone sets
RESET
WAN
L1 L2 L3 L4
P1 P2 P3 P4 P5 P6 P7 P8
GND
DC12V
WAN port
Connects to broadband Networks such as ADSL, Cable Modem or Router
POWER
Connects to the power Adapter (comes with the gateway)

8O Model (8 FXO ports)


RESET
To reset the gateway or to restore factory settings
LAN ports 1 ~ 4
(built-in Ethernet switch) Connect LAN hosts here to share WAN connection. IP sharing features enabled
FXO ports 1 ~ 8
(PSTN line connectors) Connects to PSTN lines
RESET
WAN
L1 L2 L3 L4
P1 P2 P3 P4 P5 P6 P7 P8
GND
DC12V
WAN port
Connects to broadband Networks such as ADSL, Cable Modem or Router
POWER
Connects to the power adapter (comes with the gateway)

2 Installation and Quick Setup

Network Interface

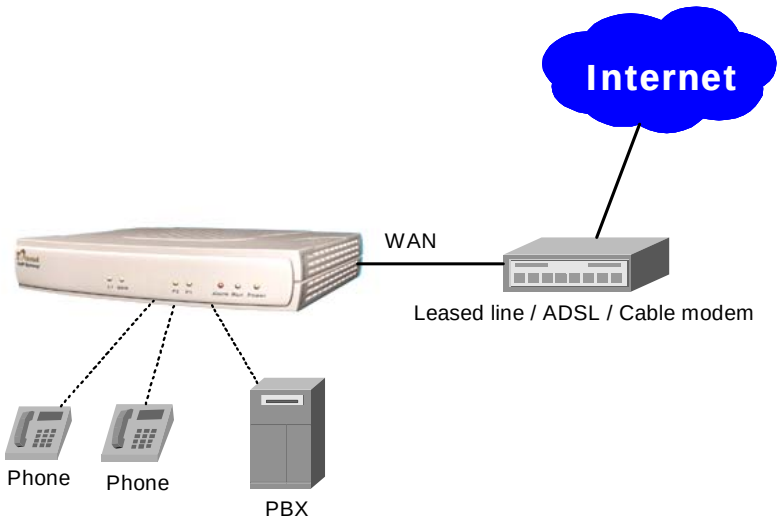
The network interface is divided into 3 basic modes as described below:

- Gateway can be assigned with a Public IP Address
- Gateway can be built under the existing NAT
- Gateway can be assigned with a Public IP address and serves as an IP sharing router.

Gateway Assigned with a Public IP Address

The gateway has a Public IP address for Internet connection regardless of whether it is a static IP address, DHCP (using a Cable Modem), or PPPoE (Dialup / ADSL).

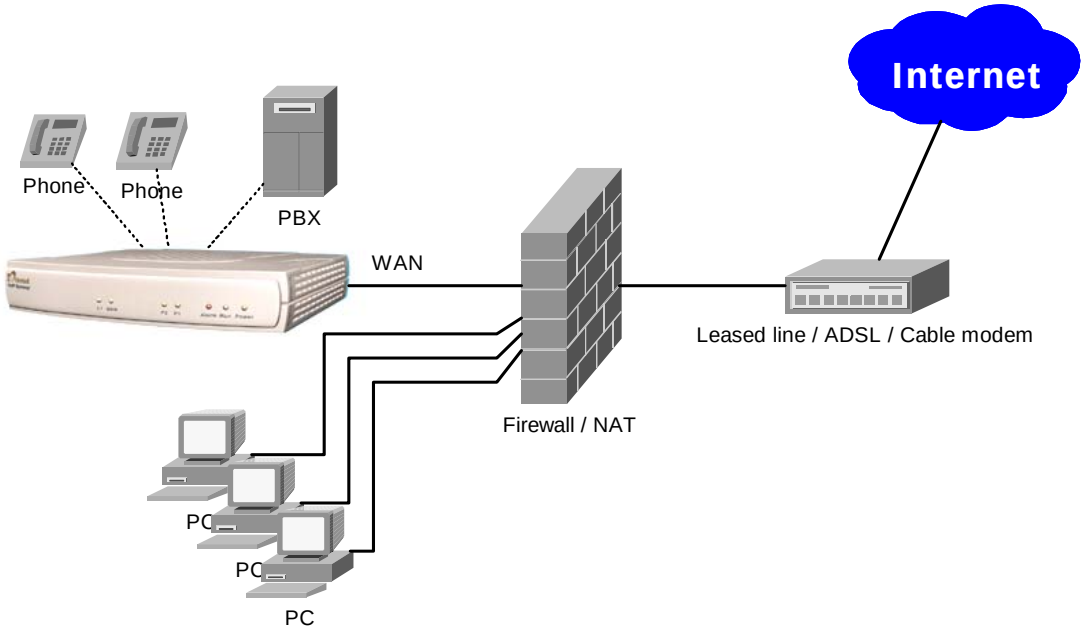
Gateway IP Settings	Need to set up as static IP, DHCP, or PPPoE	
NAT/STUN Settings	Unnecessary (Disabled)	
DDNS Settings	Unnecessary (Disabled)	



Gateway in a NAT network

The gateway uses a virtual IP address and the IP sharing function of other systems to connect to the Internet.

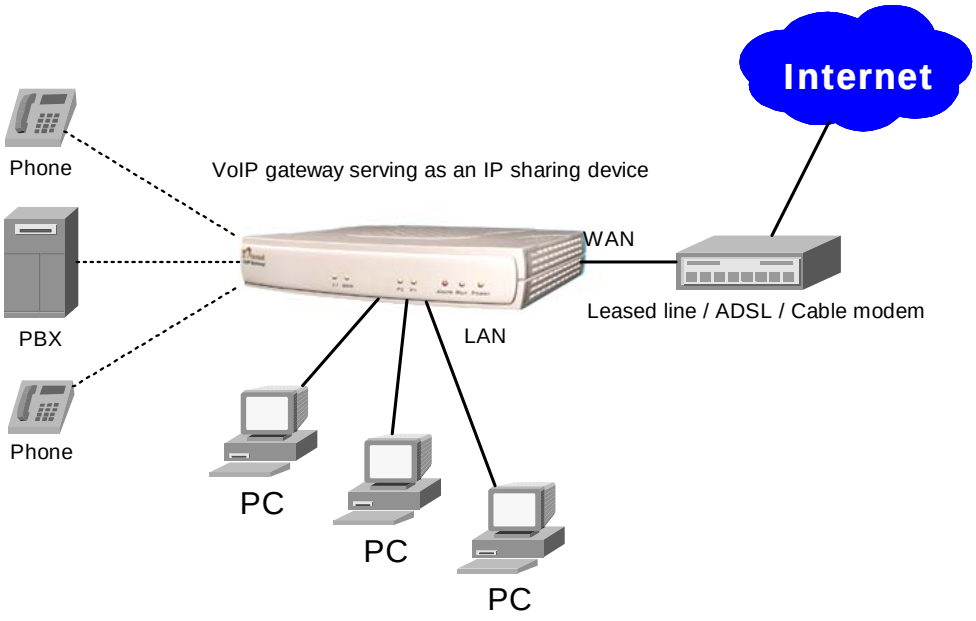
LAN IP address of IP sharing	Please avoid IP address 192.168.0.1-192.168.8.254 (You may need to change the settings of IP sharing or change SIP series Gateway LAN Port IP address)		
Gateway IP Settings	Set as static IP address, and assign the LAN IP address of the IP sharing to the Default Gateway.		
NAT /STUN Settings	Enable	If the WAN of the IP sharing device has static IP address, then the NAT IP address is set as the Public IP address of the IP sharing.	
		If the WAN of the IP sharing device uses a dynamic IP address, then it has to comply with the DDNS settings. When suing NAT, you must enter the URL (Uniform Resource Locator) that is registered to the DDNS server.	
DDNS Settings	The WAN of the IP sharing device has a static IP address.	Disabled	
	The WAN of the IP sharing device has a dynamic IP address.	Enabled: enter the registered URL (Uniform Resource Locator) into the network settings -> under NAT	



Gateway assigned with a Public IP Address and serving as an IP sharing device

The gateway will have a Public IP address regardless of whether it is a static IP application, DHCP (using a Cable Modem), or PPPoE (To connect to your ADSL account), which can then use the functions of built-in IP sharing function to allow other PCs to be on-line at the same time.

Gateway IP Settings	Need to set up as static IP, DHCP, or PPPoE	
NAT/STUN Settings	Unnecessary (Disabled)	
DDNS Settings	Unnecessary (Disabled)	
For settings at PC end, please refer to section "IP sharing functions"	PC uses a static IP address ranging from: 192.168.8.1-192.168.8.253 Subnet Mask：255.255.255.0 Default Gateway：192.168.8.254	



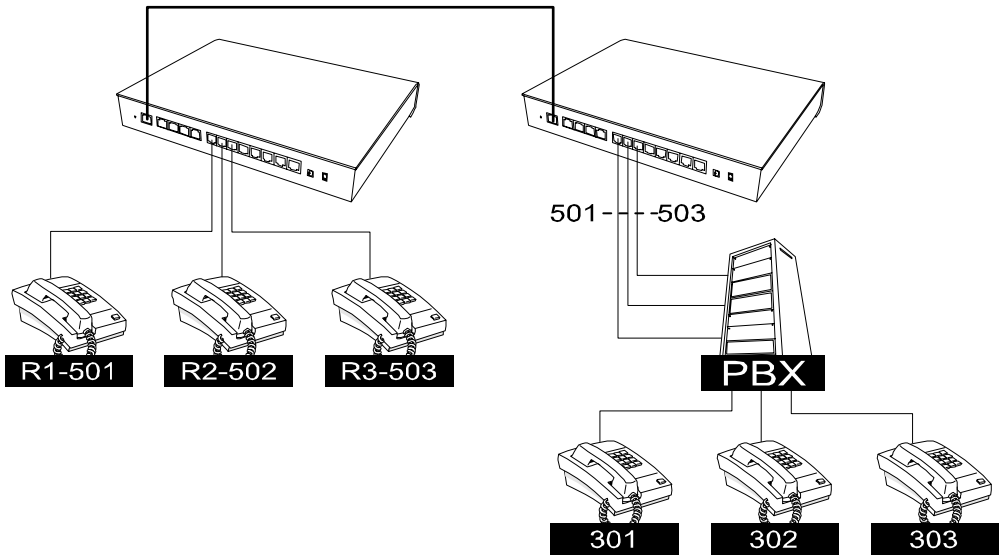
Quick Setup

The Essential Settings

- To set IP Address in Network Settings.
- To set the hotline number in Telephony Settings.
- To set the Gateway Number (this number is to identify the Gateway, not the user dialed number) in SIP Settings or Private Network
- To set the mach Gateway's information in Local Phone Book

Example for building an 8FXS and an 8FXO and using SIP Settings

1. Link FXS and FXO via a cable.
2. Connect FXS port to a phone set.
3. Connect FXO to PSTN or PBX.
4. To configure the setting – IP, Gateway Number and peer IP.
5. Use the phone set to make a call.



Incoming call:

User from #301 dials 501, then R1 will ring.

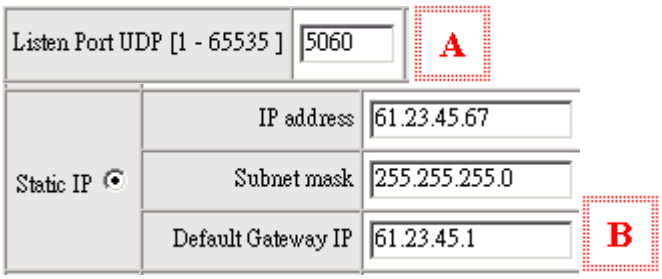
Outgoing call:

User from R1 dials 301, then 301 will ring.

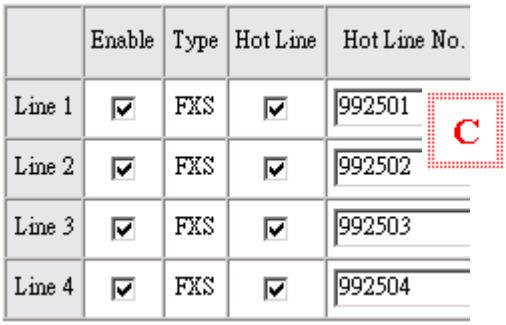
FXS

IP address of WAN port	61.23.45.67
Gateway Number	882
Peer number and IP Settings	Gateway number: 992 IP / Domain Name: 98.76.54.32

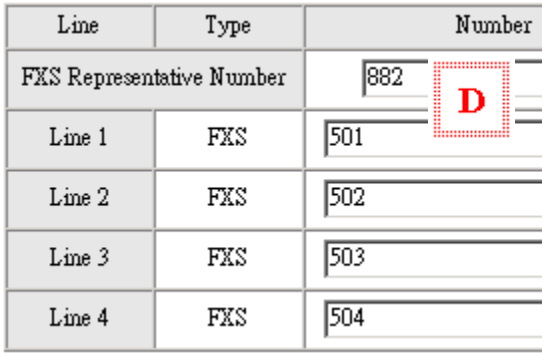
Network Settings



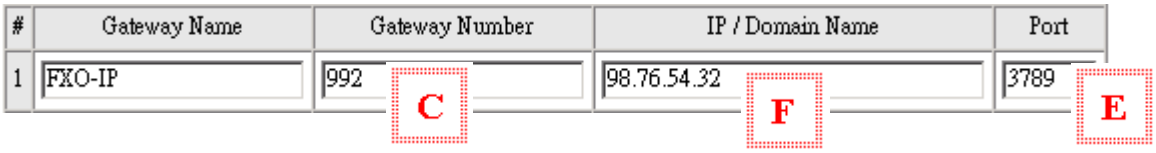
Telephony Settings



SIP Settings



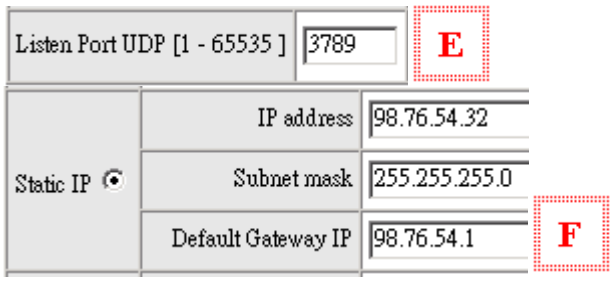
Local Phone Book



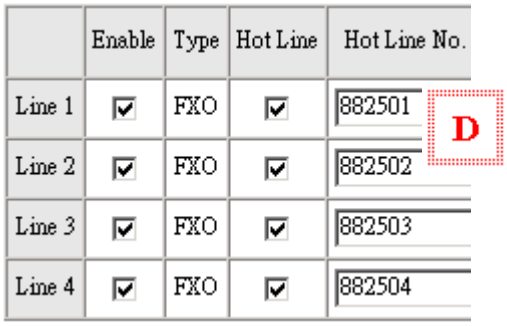
FXO

IP address of WAN port	98.76.54.32
FXO Representative Number	992
Peer number and IP Settings	Gateway number: 882 IP / Domain Name: 61.23.45.67

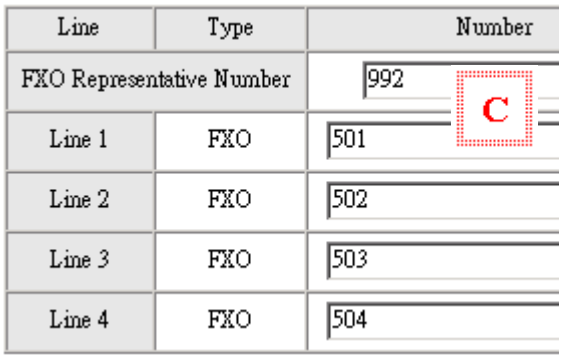
Network Settings



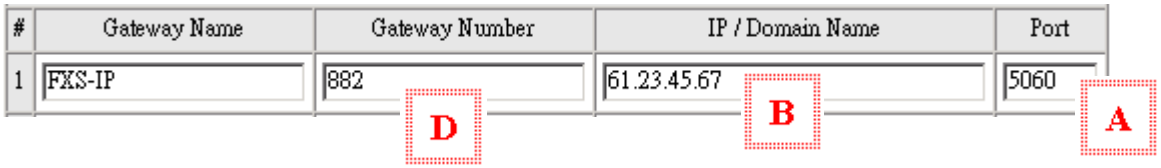
Telephony Settings



SIP Settings

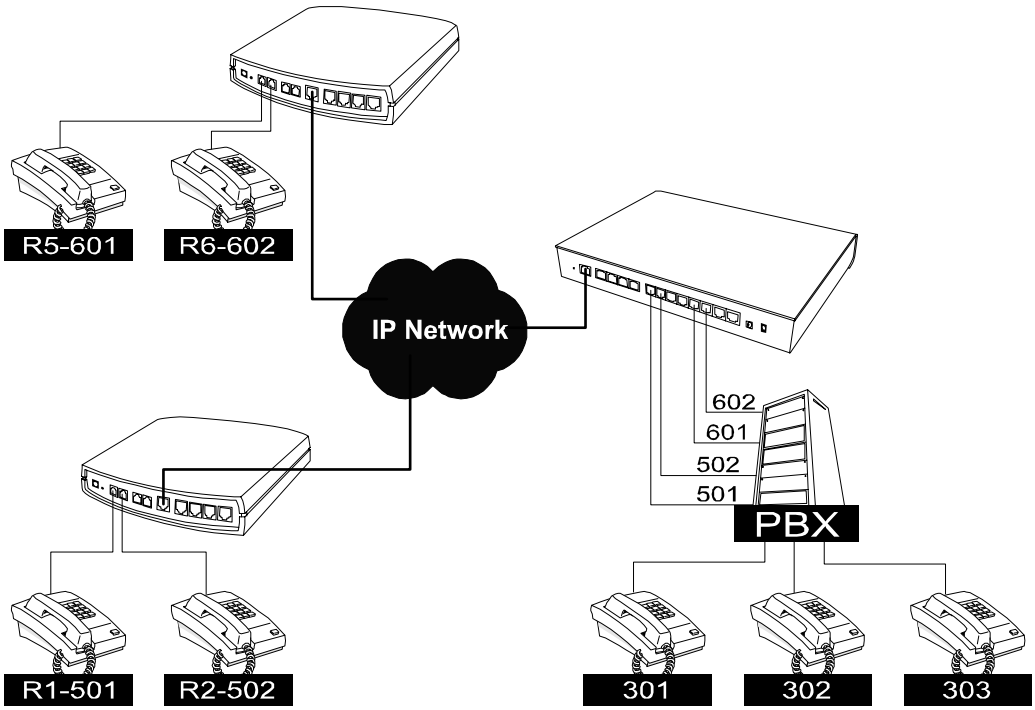


Local Phone Book



Example for building two 4FXS and an 8FXO and using Private Network

1. Connect those gateways to a hub/switch.
2. Connect FXS port to a phone set.
3. Connect FXO to PSTN or PBX.
4. To configure the setting – IP, Gateway Number and Phone Book Manager.
5. Use the phone set to make a call.



Incoming call:

User from #301 dials 501, then R1 will ring.
User from #302 dials 602, then R6 will ring.

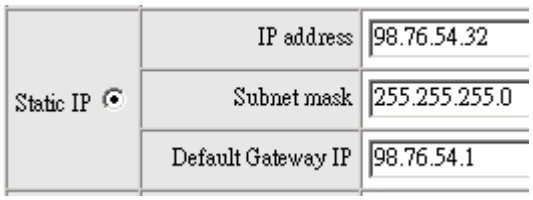
Outgoing call:

User from R1 dials 301, then 301 will ring.
User from R6 dials 501, then R1-501 will ring.

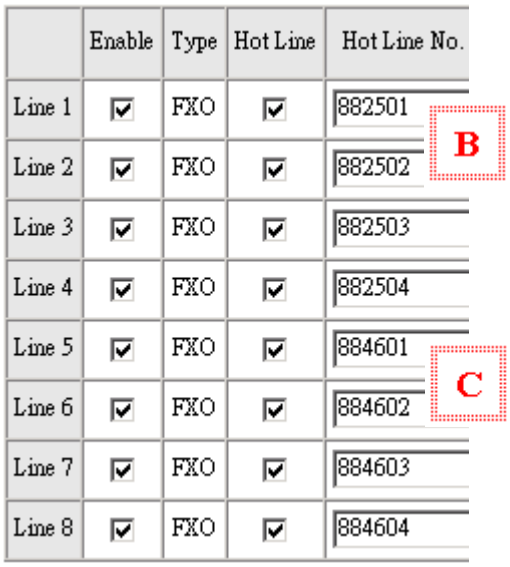
FXO

IP address of WAN port	98.76.54.32	
Gateway Number	992	
Peer number and IP Settings	Gateway number: 882 IP / Domain Name: 61.23.45.67	Gateway number: 884 IP / Domain Name: 192.168.1.2

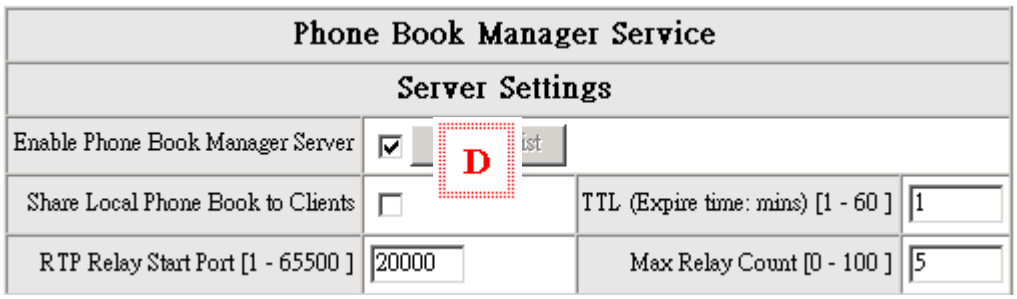
Network Settings



Telephony Settings



Private Network


Phone Book Manager Service
Server Settings
Enable Phone Book Manager Server
Share Local Phone Book to Clients
TTL (Expire time: mins) [1 - 60]
1
RTP Relay Start Port [1 - 65500]
20000
Max Relay Count [0 - 100]
5
D

Client Settings			
Register to Phone Book Manager	☑		
Gateway Name for Phone Book Manager	FXO as Server		
Phone Book Manager IP/Domain	98.76.54.32	Phone Book Manager Server Listen Port [1 - 65535]	1690
Enable Phone Book Manager Tunnel	☑	Behind Symmetric NAT	☐

E

Private Network Numbers		
Gateway Number	992	
Line	Type	Number
Line 1	FXO	501
Line 2	FXO	502
Line 3	FXO	503
Line 4	FXO	504
Line 5	FXO	601
Line 6	FXO	602
Line 7	FXO	603
Line 8	FXO	604

F

G

Local Phone Book

#	Gateway Name	Gateway Number	IP / Domain Name	Port
1	FXS #1	882		0
2	FXS #2	884		0

B

C

H

FXS #1

IP address of WAN port	61.23.45.67
Gateway Number	882
Peer number and IP Settings	Phone Book Manager Server Gateway number: 992 IP / Domain Name: 98.76.54.32

Network Settings

Static IP ◉	IP address	61.23.45.67
	Subnet mask	255.255.255.0
	Default Gateway IP	61.23.45.1

Telephony Settings

	Enable	Type	Hot Line	Hot Line No.
Line 1	☑	FXS	☑	992501
Line 2	☑	FXS	☑	992502
Line 3	☑	FXS	☑	992503
Line 4	☑	FXS	☑	992504

F

Private Network

Phone Book Manager Service			
Client Settings			
Register to Phone Book Manager	☑		
Gateway Name for Phone Book Manager	FXS #1		
Phone Book Manager IP/Domain	98.76.54.32	Phone Book Manager Server Listen Port [1 - 65535]	1690
Enable Phone Book Manager Tunnel	☑	Behind Symmetric NAT	☐

E

Private Network Numbers			
Gateway Number	882		
Line	Type	B	Number
Line 1	FXS		501
Line 2	FXS		502
Line 3	FXS		503
Line 4	FXS		504

Local Phone Book

#	Gateway Name	Gateway Number	IP / Domain Name	Port	
1	FXO	992		0	H
		F			

FXS #2

IP address of WAN port	192.168.1.4
Gateway Number	884
Peer number and IP Settings	Phone Book Manager Server Gateway number: 992 IP / Domain Name: 98.76.54.32

Network Settings

Static IP ◉	IP address	192.168.1.4
	Subnet mask	255.255.255.0
	Default Gateway IP	192.168.1.254

Telephony Settings

	Enable	Type	Hot Line	Hot Line No.	
Line 1	☑	FXS	☑	992601	
Line 2	☑	FXS	☑	992602	
Line 3	☑	FXS	☑	992603	
Line 4	☑	FXS	☑	992604	G

Private Network

Phone Book Manager Service			
Client Settings			
Register to Phone Book Manager	☑		
Gateway Name for Phone Book Manager	FXS #2		
Phone Book Manager IP/Domain	98.76.54.32	Phone Book Manager Server Listen Port [1 - 65535]	1690
Enable Phone Book Manager Tunnel	☑	Behind Symmetric NAT	☑

E

Private Network Numbers		
Gateway Number	884	
Line	Type	Number
Line 1	FXS	601
Line 2	FXS	602
Line 3	FXS	603
Line 4	FXS	604

C

Local Phone Book

#	Gateway Name	Gateway Number	IP / Domain Name	Port
1	FXO	992		0

G H

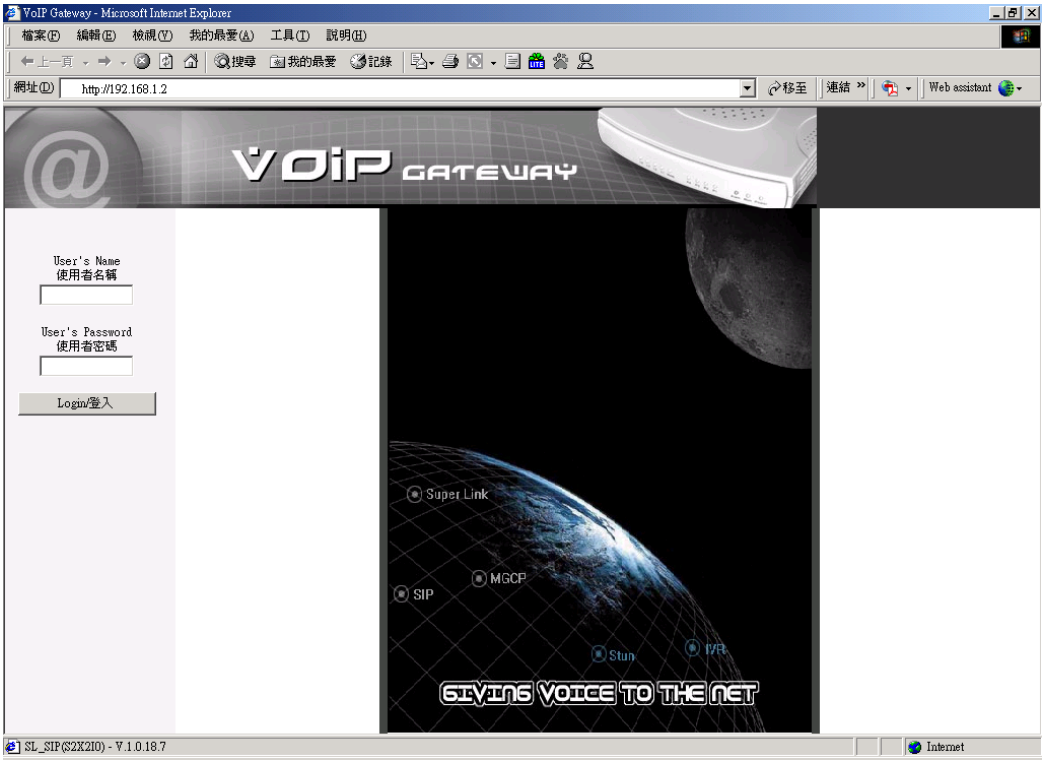
3 Setting a Gateway with WEB Browser

The gateway allows users to make settings using a web browser. After opening a browser, enter Gateway's IP address as the website address in order to enter the Web configuration screen as shown in the following diagram. (IE Browser used for example: Enter http：//192.168.1.2.)
The factory default WAN IP address for Gateway is **192. 168. 1. 2**.You can also enter "101" from the handset to inquire about the current WAN Port IP address. The factory default LAN Port IP address is 192.168.8.254.

The Web configuration supply complete functions, but in Line Extension over IP, some of functions do not need to set, and these function will not be explained.

Instructions

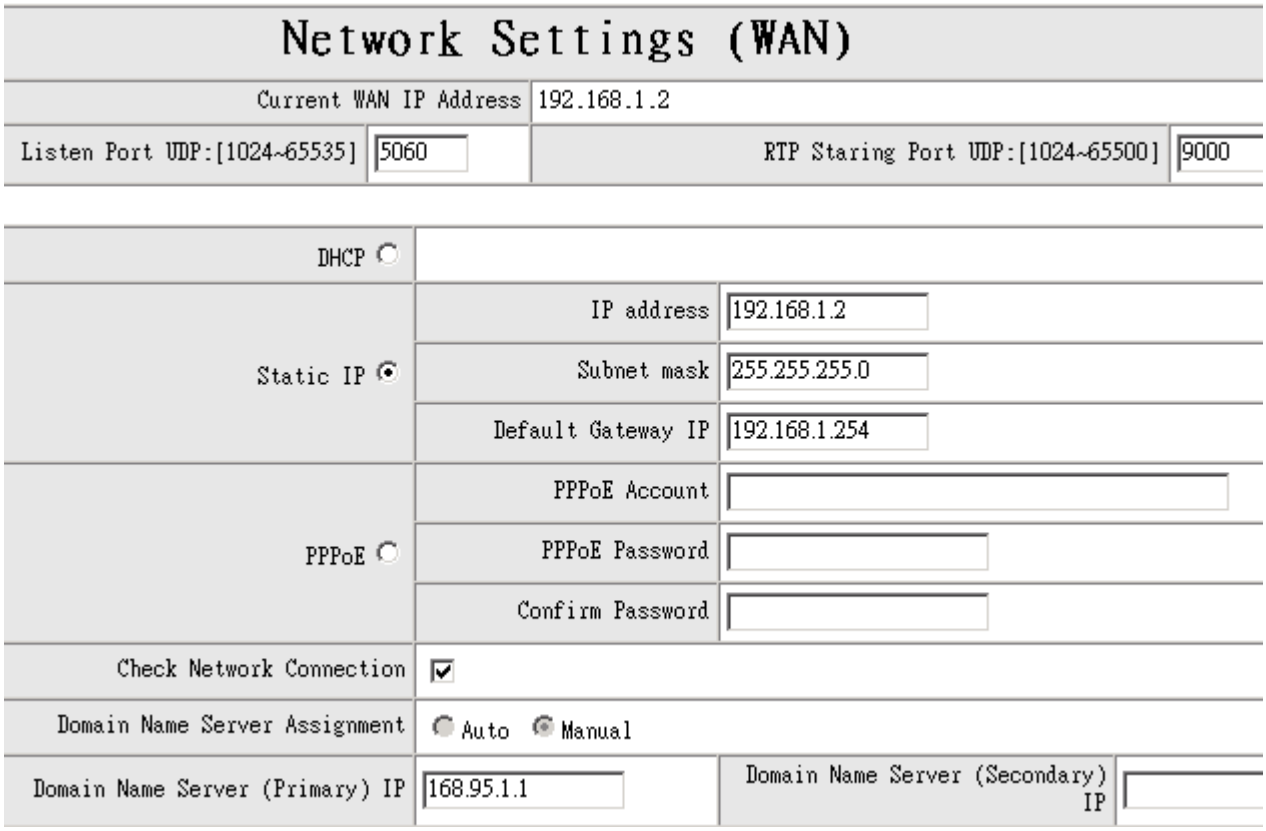
- Open an Internet browser.
- Enter gateway's WAN Port IP address in the website address area (If the PC is connected to the LAN Port, enter the LAN Port IP address. The default is 192.168.8.254)
- The following registration screen will appear (The factory default settings for **Login ID and Password are set to blank**).
- After completing and confirming the settings, some of the settings will take effect immediately. But network related settings would take effect after the gateway is restarted. Please go to **System Operation** to save the settings before restarting the system.



To avoid several people simultaneously configuring the web and causing problems to users, please enter the correct Login ID and password. If a user logs into the system, other users from different IP addresses cannot login at the same time. Please remember to logout or restart the system if not using the web configuration function.

Network Settings

The network settings are used to set the gateway's communication ports, IP configurations etc.



- Current WAN IP Address: The IP address of WAN port.
- Listen Port UDP: It is not necessary to change the protocol of the communication port used by VoIP Gateway.
- RTP Starting Port UDP: The initial value of port number for transmitting voice data among Gateway(s). Each line requires 2 ports. It is not necessary to change these.

For example, If the starting port is 9000, then Line 1 is using 9000 and 9001, and Line 2 is using 9002 and 9003, and so forth.

IP Configuration (Setting WAN Port)

There are four methods of obtaining a WAN port IP address:

1. Static IP
2. DHCP, means a Dynamic IP (Cable Modem)
3. PPPoE (Dialup ADSL)
4. PPTP.

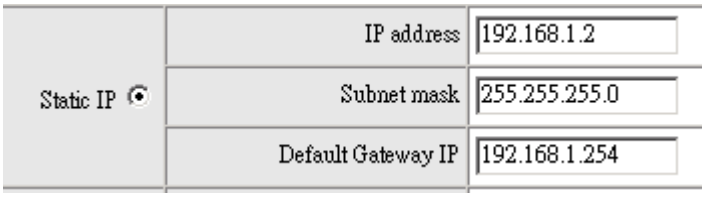
Using the DHCP and PPPoE for obtaining an IP address may vary. If not familiar with the network connection, please contact your local ISP.

Setting Dynamic IP (DHCP)

Click “DHCP” to obtain a Dynamic IP address, then click the “Accept” button at the bottom of the screen.
Save the settings: Click **System Operation** to select “Save Settings”, ”Restart”, and then click the ”Accept” button. Wait for a while (about 40 seconds), and the system will obtain the related IP value from the DHCP Server.

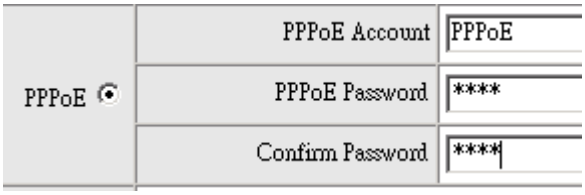
NOTE: After the system has obtained a new IP address, if using WAN Port to enter the Web Configuration Screen, a new IP address has to be used. The same applies to the following two settings.

Setting Static IP



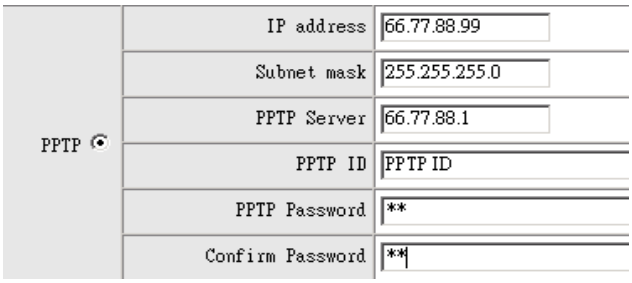
Select “Static IP” and enter the IP address, Subnet Mask and Default Gateway values. Then click the “Accept” button at the bottom of the screen.
Save the settings, and then restart the system. Wait for about 40 seconds for the system to restart.

ADSL PPPoE Settings



Select “PPPoE” Enter the Account Number, Password and Reenter Password to confirm. Then click the “Accept” button at the bottom.
Save the settings, and then restart the system. The system will take about 49 seconds to restart.

PPTP※

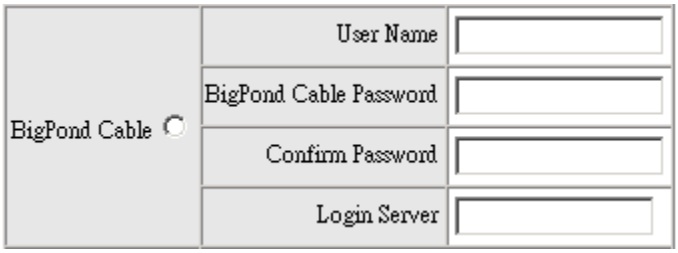


Select “PPTP” and enter the IP Address, Subnet mask, PPTP Server, PPTP ID and Password. Then click the “Accept” button at the bottom.

Save the settings, and then restart the system. The system will take about 40 seconds to restart.

If not familiar with the network connection, please contact your local ISP.Domain Name Server.

BigPond (for Australia use only)



Click “BigPond Cable” Enter User Name and Password. Login Server is optional. Then click the “Accept” button at the bottom.

Check Network Connection

The default is enabled. The system will check automatically if the match gateway is online. FXS will not play dial tone when the Network is not ready; FXO will hook off automatically to avoid calling from PSTN.

(DNS) Settings

Domain Name Server (DNS): While a gateway is accessing another gateway or computer with a hostname, it will look up the IP address from the DNS provided by ISP. The ISP whilst negotiating with PPPoE or DHCP usually assigns the DNS information. In the case that the DNS is not assigned automatically or WAN port is assigned with a static IP address, the DNS information must be assigned manually.

Auto : Gateway learns primary & secondary addresses from ISP’s DHCP server or PPPoE server.

Manual : Enter the primary & secondary addresses manually. Please be sure the IP addresses are correct otherwise the gateway will not be able to access hosts with its hostname.

Clone MAC

Some Internet Service Providers (ISP) assigns the bandwidth via the MAC (Media Access Control) Address. You can click the " Clone" button to copy the MAC address of the Ethernet Card installed in the computer used to configure the device. It is only necessary to fill in the field if required by your ISP. The “Your MAC Address” will be blank as you log in through WAN port.

LAN interface mode	
◉ Router ○ Bridge	

Network Settings (LAN)			
LAN IP / LAN default Gateway	192.168.8.254	Subnet mask	255.255.255.0
DHCP Server			
Enable DHCP Server	☐		
IP Pool Starting Address	192.168.8.1	IP Pool Ending Address	192.168.8.250
Lease Time [1 - 9999 hours]	1		
Domain Name Server Assignment	◉ Auto ○ Manual		
Domain Name Server (Primary) IP		Domain Name Server (Secondary) IP	

Port of Web Access from WAN [1 - 65535]	80

LAN interface mode※

- Router: The system serves as a router.
- Bridge: The system serves as a bridge between WAN port and LAN port.

Network Settings (LAN)

- Network Settings (LAN): Gateway LAN Port IP address and the subnet mask value. Please note that Gateway is built under NAT: Gateway LAN Port IP address cannot be in the same section as the NAT LAN Port IP address, or else it is unable to make or receive calls. For example, if the NAT LAN Port IP address is 192.168.8.1, then Gateway LAN Port cannot be ranged between 192.168.8.1 ~ 192.168.8.254. If so, please change the LAN port IP address, (e.g. setting the IP address to 192.168.99.254.)

DHCP Server			
Enable DHCP Server	☑		
IP Pool Starting Address	192.168.8.1	IP Pool ending Address	192.168.8.250
Lease Time[1 - 9999hours]	1		

- Enable DHCP Server: Enable or Disable DHCP server service of gateway.
- IP Pool Starting Address: The first IP address to be assigned to DHCP clients.
- IP Pool ending Address: The last IP address to be assigned to DHCP clients.
- Lease Time: The valid period of an assigned IP address.

Domain Name Server Assignment	◉ Auto ○ Manual		
Domain Name Server (Primary) IP		Domain Name Server (Secondary) IP	

- Domain Name Server Assignment: The DNS information to be assigned to DHCP clients.
  Auto : Assigns the same DNS information of WAN port to the DHCP clients.
  Manual : Manually assigns the DNS information for DHCP clients.

Port of Web Access from WAN[0 - 65535]	80

- Port of Web Access from WAN: Http port for WAN. To make this setting, the LAN Port must be used. Settings cannot be made using the WAN Port. Always use port 80 when connecting to LAN port.

QoS Settings

WAN QoS

WAN QoS		
☐ QoS	Downstream Bandwidth	Full
	Upstream Bandwidth	Full
ToS / DiffServ Settings		
ToS IP Precedence ◉	Signaling Precedence	3 (Flash)
	Voice Data Precedence	5 (CRITIC / ECP)
DiffServ (DSCP) ○	Signaling Value	26 (Assured Forwarding Class 3 - Low Drop Precedence, AF31)
	Voice Data Value	46 (Expedited Forwarding, EF)

- QoS (Quality of Service): Sets an external bandwidth to ensure sound quality during transmission (When this function is enabled, the voice packet has the highest priority to ensure telecommunication quality while less bandwidth is assigned for data transmission). Some models of the VoIP Gateway without this function can adjust the bandwidth automatically.
- ToS/DiffServ(Type of Service/DSCP): The voice packet has the highest priority to ensure telecommunication quality; the larger the value you set, the higher priority you will get.

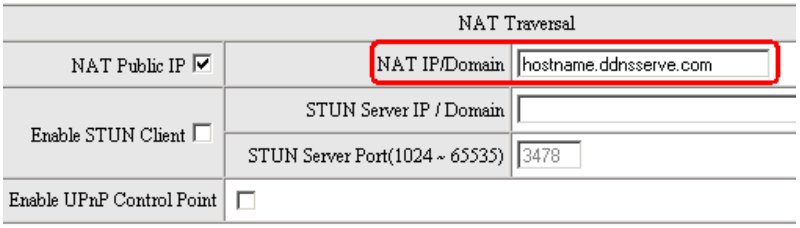
LAN QoS※

LAN QoS				
Enable LAN QoS	☐			
Port #	Priority	Flow Control	Incoming Rate Limit	Outgoing Rate Limit
LAN Port 1	Low	☐	Full	Full
LAN Port 2	Low	☐	Full	Full
LAN Port 3	Low	☐	Full	Full
LAN Port 4	Low	☐	Full	Full

- Priority: Set the priority of physic LAN port.
- Flow Control: Enable or Disable Flow control.
- Incoming Rate Limit: Set the incoming rate limit of a specific LAN port.
- Outgoing Rate Limit: Set the outgoing rate limit of a specific LAN port.

NAT/DDNS

NAT Traversal



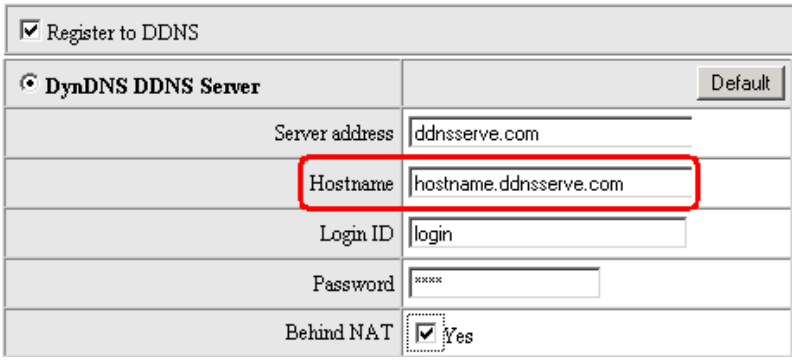
If a Gateway is set up under an IP sharing setting, you can select either the NAT or STUN protocol.

- NAT Public IP: The IP address used by the gateway should be a virtual address. Further more, users must set the Virtual Server Mapping in the NAT Server (A virtual server is defined as a Service Port, and all requests to this port will be redirected to this specified the server IP address).

  The default port is listed below:
  Listen Port (UDP): 5060
  RTP Starting Port (UDP): 9000~9015 (Listen Port used for telephone communication).
  Http Port (TCP): 80

- NAT IP/Domain: Enter the NAT Server IP address (Real External IP address of NAT Server) then fill in the URL (Uniform Resource Locator). If using DDNS, please refer to the next setting item
- Enable STUN Client: Using STUN protocol prevents problems with setting the IP sharing function, but some NAT do not support this protocol.
- STUN Server IP/Domain and Port: Enter the STUN server IP address and Listen Port number. You can set 2 STUN server spread by semicolon.
- Enable UPnP Control Point: To enable the VoIP gateway's IP traffic to pass through a NAT server. This function only works when the NAT server supports UPnP and has it enabled.

DDNS



These settings are only necessary when the gateway is set up under a NAT that uses a dynamic IP address and do not support DDNS.
Choose a DDNS Server: The current system allows users to choose either DynDNS、TZO、3322.org、PeanutHull or a private server. Please apply for a user account before choosing a service provider.

- Server address: Sets up the IP address or URL (Uniform Resource Locator) of the DDNS Server.
- Hostname: The URL of the system (or NAT) – apply from a domain name registration providers.
- Login ID and Password: The ID and password are used to log into the DDNS server.
- Behind NAT: Select only when the system is set up under NAT.

NOTE: If the Gateway is set up under NAT, then enter the hostname into the NAT IP/Domain.

Telephony Settings

FXS Only

FXS Caller ID Generation	◉ Disable ○ DTMF ○ FSK
FSK Caller ID Type	◉ Bellcore ○ ETSI

- FXS Caller ID Generation: Select this option to enable the caller ID display function. When enabled, the caller's phone number will be displayed on your phone set when the call comes through. FSK is preferred in some countries.
- FSK Caller ID Type: Select FSK type. In most cases, Bellcore is preferred in North America and ETSI in Europe.

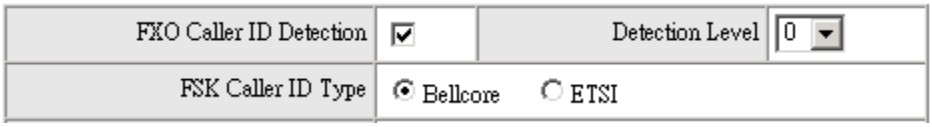
	Enable	Type	Hot Line	Hot Line No.	Group Hunting	Check Jumper Period	Fast Answer	Enable FAX
Line 1	☑	FXS	☑	992701	☑	0	☐	☑
Line 2	☑	FXS	☑	992702	☑	0	☐	☑
Line 3	☑	FXS	☑	992703	☑	0	☐	☑
Line 4	☑	FXS	☑	992704	☑	0	☐	☑

- Hot Line: **This function MUST be checked**.
- Hot Line No.: Enter the hot line number. **It must be correct**.
- Check Jumper Period: This function is to wake up Jumper if FXS connects to Jumper. The minute is a unit of the setting.
- Fast Answer: If FXS connects to automated attendant, please enable it. **If FXS does not connect to automated attendant, please disable it.**
- Enable FAX: If the port is only for phone call, please disable it, or it will affect to communicate by telephone.

FXS Polarity Transparent	☐	Jumper Alert On Period [130 - 230 ms]	170
Ring Time Limit [10 - 600 s]	40		
Enable End of Digit Tone	☐		
PBX Trunk Access Code			

- FXS Polarity Transparent: If the line that connects to FXO supplies the function of Polarity Reversal, enable this function; FXO will detect reversal signal. FXS generates reversal signal.
- Jumper Alert On Period: If it is not to wake up Jumper, please increase the value. If the value is too long, it will affect PBX to answer incoming call, and the phone will ring.
- Ring Time Limit (10 - 600secs): The maximum time to cancel a no answering call.
- Enable End of Digit Tone: The VoIP gateway play "Do-Do" to notify user the call is in progress.
- PBX Trunk Access Code: When FXO connects to PBX intension and it needs to dial 0 (or 9, other number) to make a PSTN call, please enter the number.

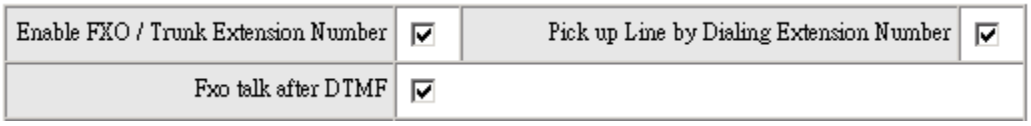
FXO Only



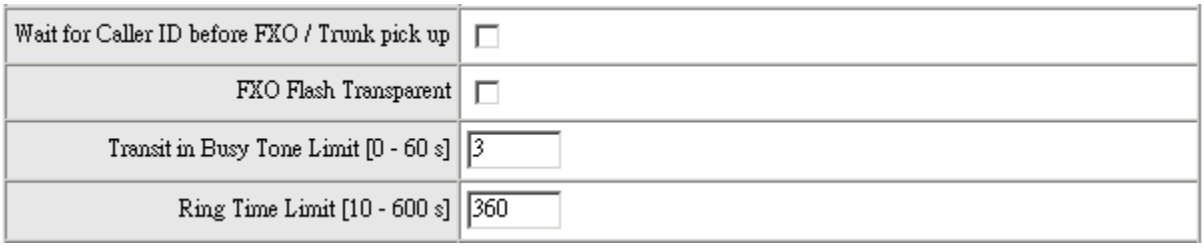
- FXO Caller ID Detection: To detect the Caller ID delivered from PSTN to the FXO port. While enabled, the Caller ID detected on the FXO port will be send to the SIP Proxy Server on dialing out calls.
- Detection Level: If FXO is not able to detect Caller ID, please adjust this parameter.
- FSK Caller ID Type: Select FSK type. In most cases, Bellcore is preferred in North America and ETSI in Europe.

	Enable	Type	Hot Line	Hot Line No.	Warm Line (Hot Line Delay)	Dial-Out Prefix	Grounding Compensation	Enable FAX
Line 1	☑	FXO	☑	882701	0 [0 - 60 s]		☐	☐
Line 2	☑	FXO	☑	882702	0 [0 - 60 s]		☐	☐
Line 3	☑	FXO	☑	882703	0 [0 - 60 s]		☐	☐
Line 4	☑	FXO	☑	882704	0 [0 - 60 s]		☐	☐

- Hot Line: **This function MUST be checked**.
- Hot Line No.: Enter the hot line number. **It must be correct**.
- Enable FAX: If the port is only for phone call, please disable it, or it will affect to communicate by telephone.



- Enable FXO/Trunk Extension Number: **This function MUST be checked**.
- Pick up Line by Dialing Extension Number: **This function MUST be checked**.
- FXO talk after DTMF: As user makes a out-going call(from FXS to FXO), FXO doesn't send RTP to FXS until it dial to PBX.


Wait for Caller ID before FXO / Trunk pick up
FXO Flash Transparent
Transit in Busy Tone Limit [0 - 60 s]
3
Ring Time Limit [10 - 600 s]
360

- Wait for Caller ID before FXO / Trunk pick up: If this function is enabled, FXO picks up after the second ring. This is for detecting caller ID from FXO port. It avoids FXO to misunderstand the signal of Caller ID to extension number and detect Caller ID correctly.
- FXO Flash Transparent: As user presses FLASH key at FXS side, FXO will generate a FLASH to PBX.
- Transit in Busy Tone Limit: The duration VoIP gateway plays a busy tone before FXO hook-on. To notify the caller from PSTN that this call is finished.
- Ring Time Limit: The maximum time of FXS to cancel a no answering call.

SIP Settings

Line	Type	Number
FXO Representative Number		
Line 1	FXO	701
Line 2	FXO	702
Line 3	FXO	703
Line 4	FXO	704

- Number: To set the number of each line and representative number. The representative numbers must be existed in the match gateway's phone book.
  Note: These numbers are not the number that user dials.

Please only set numbers in SIP Settings or Private Network.

Private Network

It is the other way to set the match gateway's information. Gateways register to Phone Book Manager automatically. It is more convenience than using Local Phone Book.

Phone Book Manager Service			
Server Settings			
Enable Phone Book Manager Server	Clients List		
Share Local Phone Book to Clients		TTL (Expire time: mins) [1 - 60]	1
RTP Relay Start Port [1024 - 65500]	20000	Max Relay Count [0 - 100]	5
Client Settings			
Register to Phone Book Manager		Gateway Name for Phone Book Manager	
Phone Book Manager IP/Domain	192.168.1.1	Phone Book Manager Server Listen Port [1024 - 65535]	1690
Enable Phone Book Manager Tunnel	☑	Behind Symmetric NAT	
Password Settings			
Phone Book Manager Login Password		Confirm Password	

Server Settings

- Enable Phone Book Manager Server: It allows other Gateway users to register the IP address and Gateway Number in this Phone book manager server. It is recommended to use static IP for the Phone Book Manager Server.

- Share Local Phone Book to clients: While this option is enabled and the gateway is performing as a Phone Book Manager Server, this gateway will append its local Phone Book entries to the Server for other clients to lookup.
- TTL (Time to Live): If a Gateway system that is controlled by the Phone Book Manager Server does not report back within the deadline set by TTL, the system will be excluded from the user's list. Each Gateway should report to the Phone Book Manager Server once every 40 seconds.
- RTP Relay Start Port: Start port of RTP Relay Service. Phone Book Manager supplies RTP Relay to ensure that each client is able to communicate normally.
- Max Relay Count: The max relay service counts supported by Phone Book Manager. If the quality of voice is bad, please decrease Max Relay Count.
  Note: Please considerate the bandwidth of Phone Book Manager and the Codec of each client. For example: a client uses Codec as 729A, Packet Time is 20ms, and each call will consume 60kb/s of bandwidth in Phone Book Manager. If the bandwidth is limitless, Every Phone Book Manager is able to support 4 calls and 5 RTP Relay service at the same time.

The bandwidth of different Codec needing:

	G.711	G.729a	G.723.1
20ms	171.2	59.2	N/A
30ms	156.8	44.8	41.6
60ms	142.4	30.4	27.2

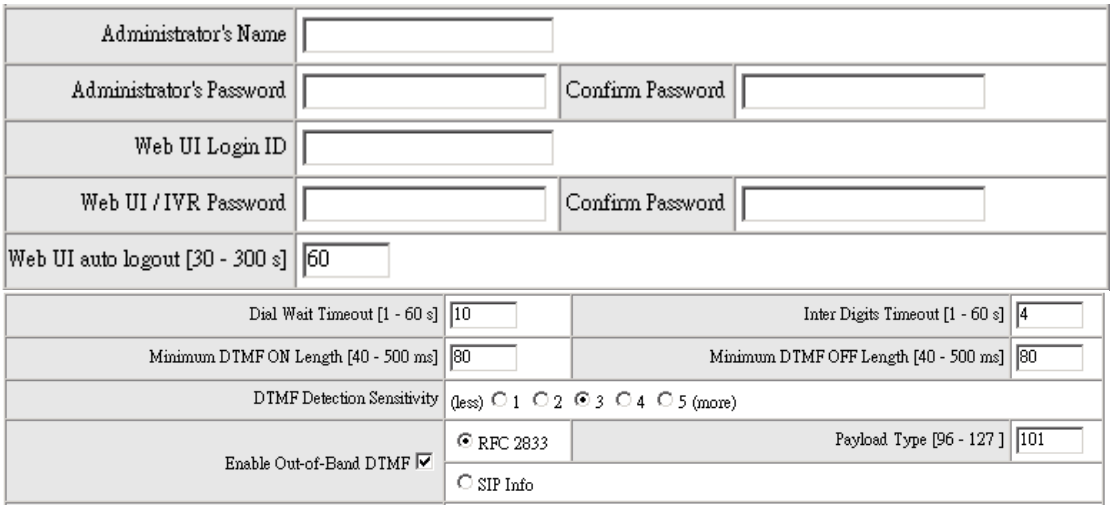
Client Settings

- Register to Phone Book Manager: To register to the Phone Book Manager. If the Gateway is Phone Manager Server, it has to enable this function to communicate with other clients.
- Gateway Name for Phone Book Manager: The alias registered with the Phone Book Manager Server.
- Phone Books Manager IP/Domain: Enter the IP address for the Phone Book Manager Server. It supports URL (Uniform Resource Locator).
- Phone Book Manager Server Listen Port: The protocol communication port for transmitting signals between the Phone Books Manager and other Gateway systems. Please confirm whether the setting is the same as that for the **Phone Book Manager Server.**
- Enable Phone Book Manager Tunnel: Check it to make a call through private tunnel.
- Behind Symmetric NAT: Check it if the VoIP Gateway is built under NAT.
- Phone Book Manager Login Password: Enter the registered password. If this system is serving as the Phone Books Manager, the set password is also the password used for registering other Gateway systems.

Note: If the NAT type of your router is Restricted Cone, Port Restricted Cone and Symmetric, please use STUN to decrease the loading of Phone Book Manager, and the group is able to loading more calls.

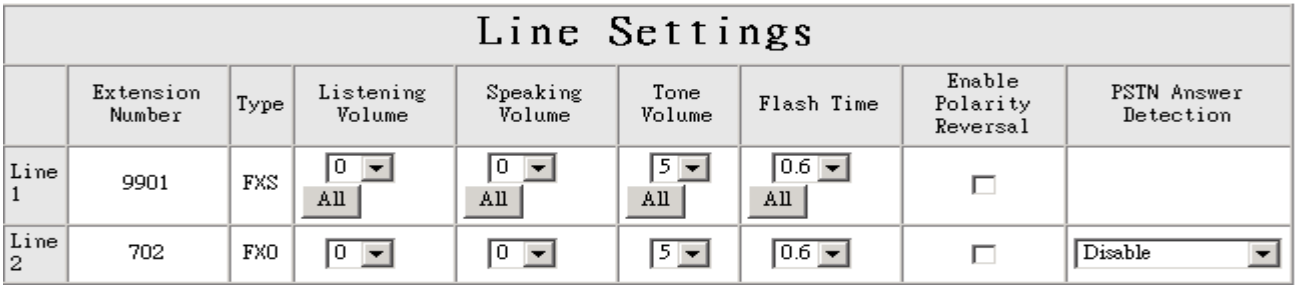
Using Phone Book Manager needs to set the match Gateway's port as 0, please see Page 17.

Advanced Options



- There are two levels to enter Web. Administrator is able to change all settings. Web UI only changes some settings.
- Web UI auto log out: If a user does not act within the effective time range when logging into a web page, the user will be disconnected from the web page to allow others to login.
- Dial Wait Timeout: Use it to set the waiting time for the user's first key pressing when dialing a number. The user will hear a busy tone if he/she does not press the first key within the set time frame.
- Inter Digits Timeout: Set the waiting time between each key pressing. The inputted numbers will be dialed after the timeout.
- Minimum DTMF ON Length (Dial on)/ Minimum DTMF OFF Length (Dial off - between tones): Used to set dial tone when a call is being diverted to another extension.
- DTMF Detection Sensitivity: Used to adjust the sensitivity of the telephone keys.
- Enable Out-of-Band DTMF: **This function MUST be checked**. To send DTMF keys (0~9, *, #,) follow the RFC2833 rules or via SIP Info.
- Payload Type：Payload type of RFC2833.

Line Settings



- Listening Volume: Adjusts the hearing volume.
- Speaking Volume: Adjusts the speaking volume.
- Tone Volume: Adds a new option to make tone volume adjustable. This setting will be applied to all tones generated by the VoIP gateway including Dial Tone, Busy Tone, and so on.
- Flash Time:

  FXS: Used to adjust the detecting period of flash signal from the phone set connected to the FXS port. For example, if pressing the HOLD key will disconnect a call, increase of "Flash Detect Time" should fix this issue.

  FXO: Used to set the time frame that FXO generates a FLASH signal.

Voice

Voice				
Preferred Codec Type	G.723.1 6.3kbps			
Jitter Buffer[60 - 1200ms]	360			
Silence Suppression	☐	Echo Cancelling	☑	
Codec	G.711	G.723	G.726	G.729A
Packet Time (ms)	60	60	60	60
Approximate Bandwidth Require (kbps)	71.2	13.6	39.2	15.2

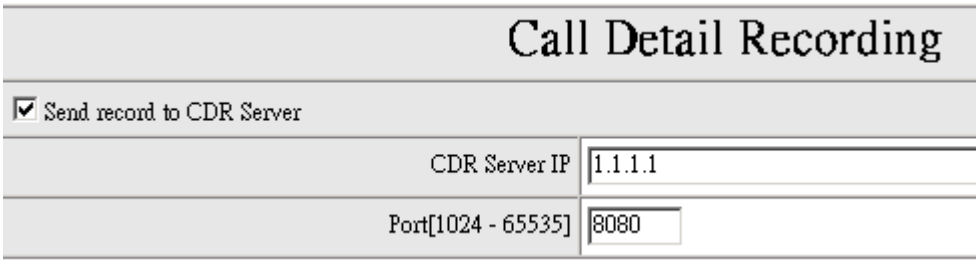
- Preferred Codec Type: Since different voice codec have different compression ratios, so the sound quality and occupied bandwidths are also different. It is recommended to use the default provided (G.723.1) because it occupies less bandwidth and will provide better sound quality.
- Jitter Buffer: Adjusts the jitter to receive a packet. If the jitter range is too wide, it will delay voice transmission.
- Silence Suppression: If one side of a connection is not speaking, the system will stop sending voice data (package) to decrease bandwidth usage.
- Echo Canceling: Prevents poor telecommunication quality caused by echo interference.
- Packet Time: Defines how long the VoIP gateway sends a RTP packet-voice packet- to the other side. The smaller the value, the more bandwidth usage. The larger the value, the more voice delay.
- Approximate Bandwidth Require: The bandwidth required varies with codec format and packet time.

Fax Settings

FAX Settings			
T.38 ◉	◉ UDP ○ TCP	Enable High Quality ☑	Enable Secure T.38 ☐
T.30 ○	FAX Codec	G.726 32kbps	
	Approximate Bandwidth Require (kbps)	42.8	
	FAX Frame Count Per Packet[3 - 8]	4	
	FAX Jitter Buffer[60 - 1200ms]	360	
FAX Tone Detection Sensitivity	(less) ○ 1 ○ 2 ◉ 3 ○ 4 ○ 5 (more)		

- T.38: The T.38 protocol is used for better and faster facsimile transmission. When this function is enabled, the following fax and voice parameter settings will be disabled, so it is recommended to enable this function to gain better fax quality. When this function is enabled, please select UDP, TCP, or AUTO. If selecting TCP and some routers cannot use the Fax function, please select UDP instead.
- Enable High Quality: The system sends the same FAX frame twice to get a high quality of the FAX. It requires more bandwidth.
- Enable Secure T.38: This allows VoIP Gateways to send faxes on both sides.
- T.30: The system uses T.30 as the protocol for fax transmission. The parameter settings are the same as for voice transmission. However, enabling the fax function will consume more network resources and will affect transmission quality.
- FAX Detect sensitivity：Used to adjust the sensitivity of detection as to whether a phone call is a FAX or not.

CDR Settings

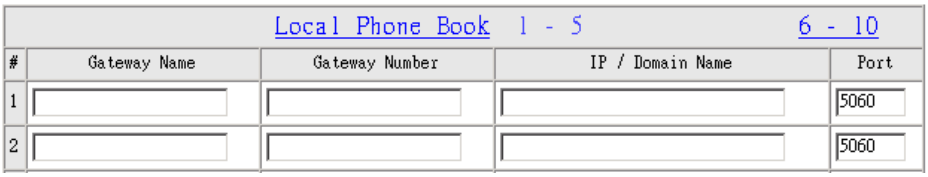


The user can set up a CDR Server to record call details for every phone call.
The present CDR provides the call detail recording in a text file and if needed. it can be imported to prepare for an analysis report.

- Send record to CDR Server: Enables the call detail recording function.
- CDR Server IP: Enter the IP address of the CDR server.
- Port: Enter the listen port of the CDR server.

Local Phone Book

This system can set up and store 100 phone numbers into a phone book and provides an IP address query when calling to other Gateway(s). If no Phone books manager is set within a Gateway group, then all Gateway systems have to set up phone data for each VoIP Gateway to communicate with each other.



- Gateway Name: Enter the match Gateway code or an easy-to-remember name.
- Gateway Number: Enter the match Gateway Number.
- IP/Domain Name: Enter the IP address or URL (Uniform Resource Locator) of the match Gateway.

If you use Private Network to set Gateway Number, IP/Domain Name has to be blank.

- Port: Enter the gateway's gateway port.

Please enter 0 if you use Private Network to set Gateway Number.

Click the "Accept" button after finish settings.

Language

The system provides English, Traditional Chinese, and Simplified Chinese to display text on Web pages. Meanwhile, it will change the language for IVR (Interactive Voice Response).

System Information

System Information

Port Status

No	Type	Extension Number	Line Status	Calls	Dialed Number	Proxy Register	UPnP on RTP
1	FXS	701		0		Disabled	
2	FXS	702		0		Disabled	
3	FXO	703		0		Disabled	
4	FXO	704		0		Disabled	

Server Registration Status

DDNS Registation	Disabled
Phone Book Manager Registation	Disabled
STUN Registation	Disabled
UPnP Negotiation	Disabled

RTP Packet Summary

Displays the information of the last finished call. It contains peer IP, peer port, packets sent, packet received and packet lost.

RTP Packet Monitor

Line 1	G.711 64kbps	Send Packet Count	0	Receive Packet Count	0	Packet Lost Count	N/A
The last packet's source IP				The last packet's source Port		0	

Line 2	G.711 64kbps	Send Packet Count	0	Receive Packet Count	0	Packet Lost Count	N/A
The last packet's source IP				The last packet's source Port		0	

STUN Inquiry

STUN Inquiry

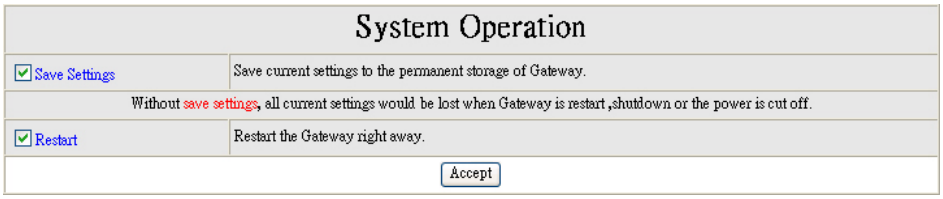
NAT Type	Open
STUN Server	1.2.3.4
STUN Server Port(1024 - 65535)	3478

CPT parameters Table

These parameters are for FXS playing Call Progress Tone.

# 1 Enable Detect Setting 1						Default
Tone Type	Low Frequency	High Frequency	T_ON_1	T_OFF_1	T_ON_2	T_OFF_2
Dial Tone	350	440	3000	0	0	0
Congestion Tone	480	620	250	250	0	0
Busy Tone	480	620	500	500	0	0
Ring-Back Tone	440	480	1000	2000	0	0

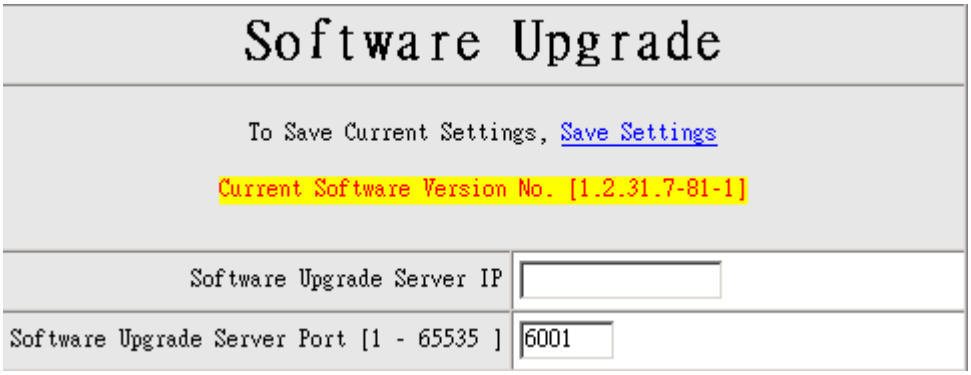
System Operations (Save Settings)


System Operation
Save Settings
Save current settings to the permanent storage of Gateway.
Without save settings, all current settings would be lost when Gateway is restart ,shutdown or the power is cut off.
Restart
Restart the Gateway right away.
Accept

- Save Settings: Save settings after completing. The new settings will take effect after the system is restarted. Please select “Save Settings”.
- Restart: If it is necessary to restart the system, please select “Restart” and click the “Accept” button.

Software Upgrade

Gateway provides software upgrade function for a remote end.


Software Upgrade
To Save Current Settings, Save Settings
Current Software Version No. [1.2.31.7-81-1]
Software Upgrade Server IP
Software Upgrade Server Port [1 - 65535]
6001

- Software Upgrade Server IP: Please enter the software server IP address.
- Software Upgrade Server Port: The default setting is 6001(Do not change this setting).

Logout

Gateway only allows one user to login at a time, so whenever a change is made, please save the settings, restart the system, or logout to avoid the situation where other users cannot login to change settings.

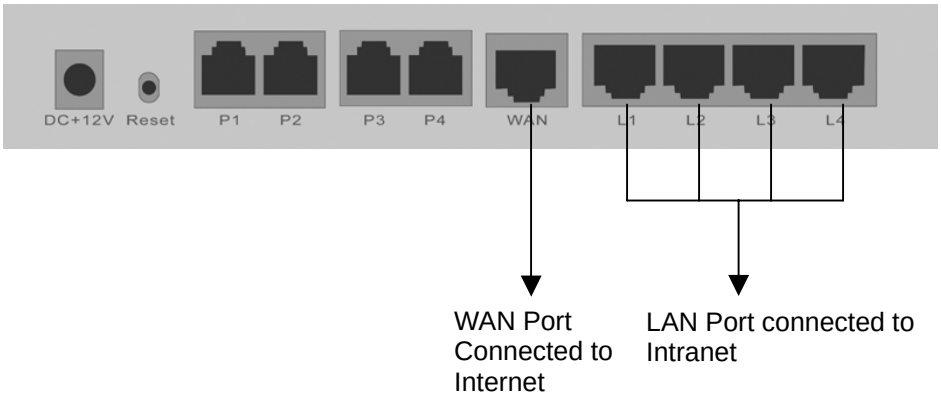
4 IP Sharing Functions

All Gateway series have a built-in IP sharing function. The settings and instructions at a PC end are described below:

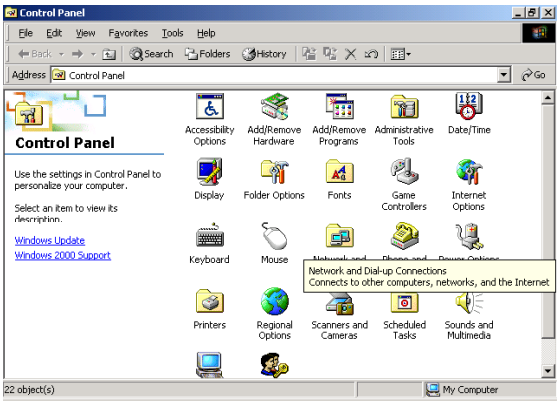
Current Intranet only supports static IP mode, and the settings at the PC end are as follow:
Available IP address Range : 192.168.8.1 – 192.168.8.253 (default address of Gateway is 192.168.8.254)
Subnet Mask : 255.255.255.0
Default Gateway : 192.168.8.254

The above values vary with different LAN Port Settings.
Assume Gateway's LAN settings are,
IP address : 192.168.3.1
Subnet Mask : 255.255.255.0

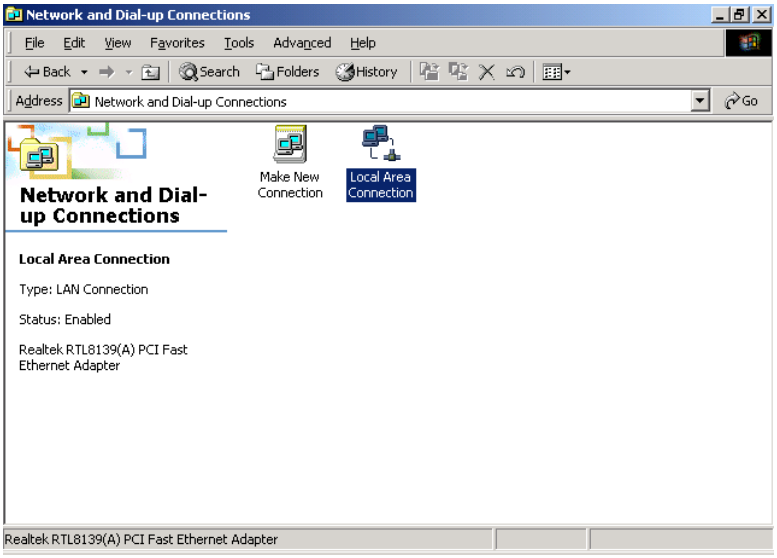
Then, the settings at PC end should be as follows:
Valid IP address range: 192.168.3.2 – 192.168.3.254
Subnet Mask : 255.255.255.0
Default Gateway : 192.168.3.1



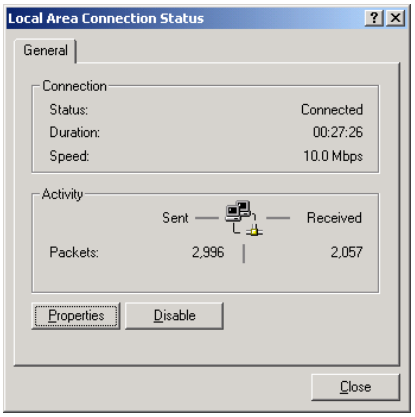
The IP settings on PC are as follows (using Windows 2000 for example)
Open Start->Settings->**Control Panel**
Open **Network and Dial-up Connection**



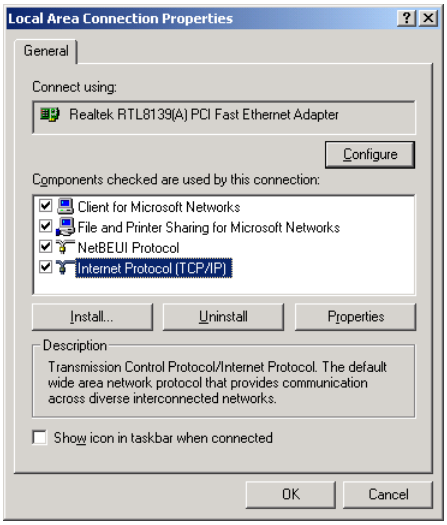
Open Local Area Connection



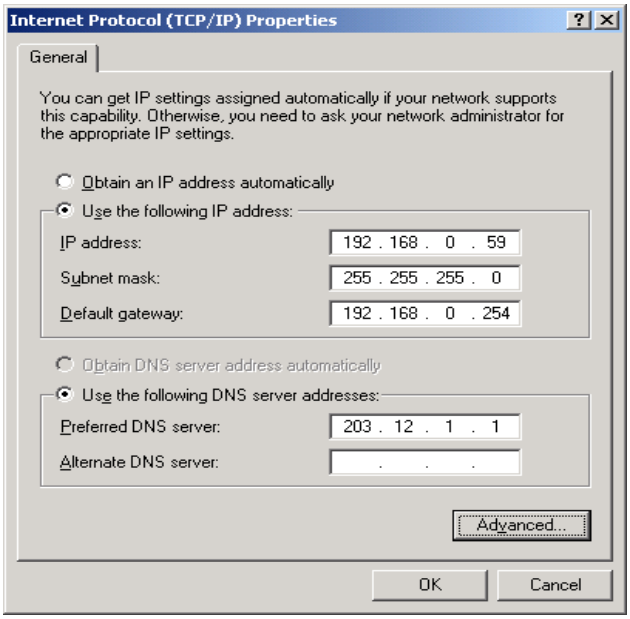
Click **Properties**



Select **TCP/IP**, and then click **Properties**.

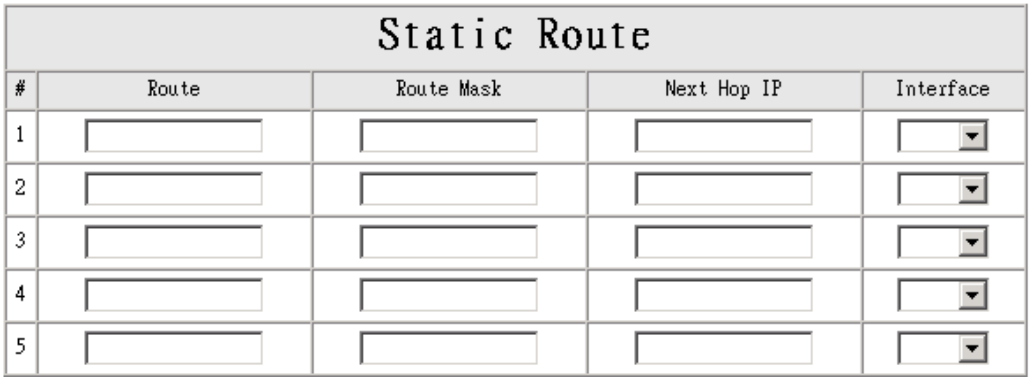


Select "**Use the following IP Address ”** and enter IP address, Subnet Mask, and Default Gateway. Please note that an IP address in the same domain cannot be reused. Then, enter the DNS server IP address (varies in different networks. consult your ISP's service for information). Click the "**OK”** button and after completing the settings, users can use both the VoIP and network services concurrently.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 59
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 254
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 203 . 12 . 1 . 1
Alternate DNS server:
Advanced...
OK
Cancel

5 Advanced Feature

Static Route※

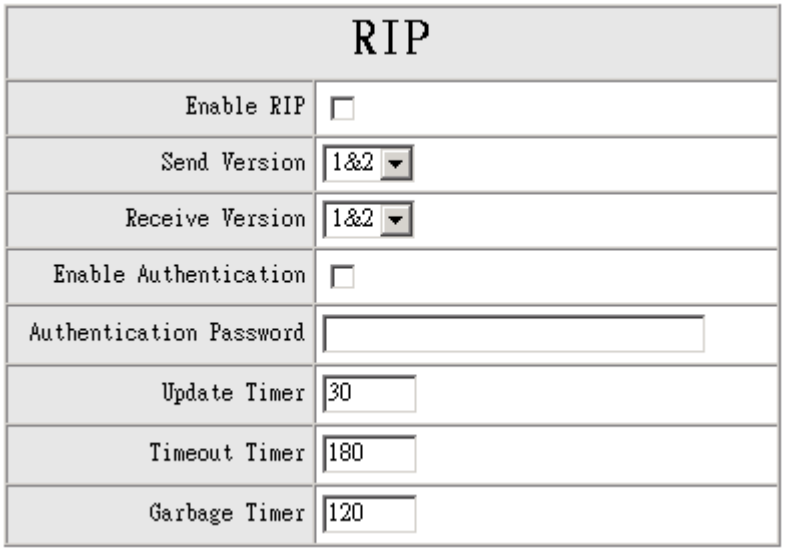


Static Route				
#	Route	Route Mask	Next Hop IP	Interface
1				
2				
3				
4				
5				

To build static routes within an internal network. These routes will not apply to the Internet.

- Route: Enter the IP of the specified network.
- Route Mask: Enter the subnet mask to be used for the specified network.
- Next Hop IP: Enter the IP address to the specified network.
- Inter Face: Select the inter face.

RIP(Routing Information Protocol) ※



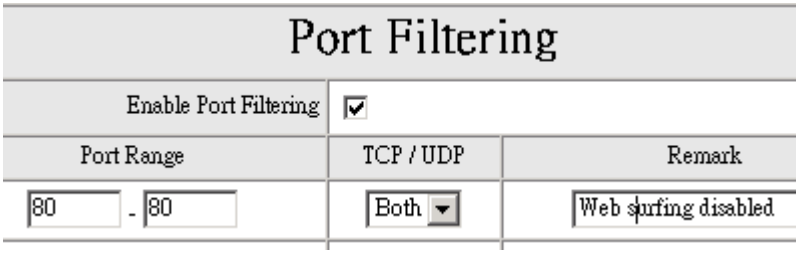
RIP	
Enable RIP	☐
Send Version	1&2
Receive Version	1&2
Enable Authentication	☐
Authentication Password	
Update Timer	30
Timeout Timer	180
Garbage Timer	120

To establish dynamic routes within an internal network. These routes will not apply to the Internet.

- Enable Authentication/Authentication Password: If the box is checked. All the boxes in this RIP group should be filled in the same password.

Port filtering

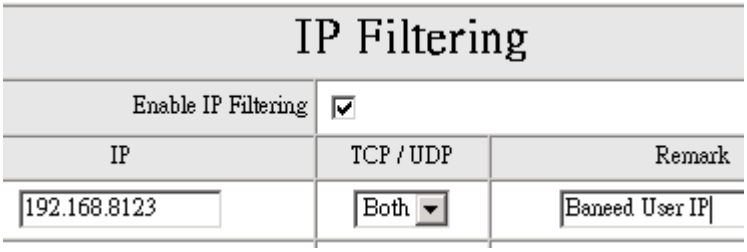
Port filtering enables you to control all data that can be transmitted in routers; **principles of filtering---When the port used at the source end is within the limited scope, it will be filtered without transmission.**



- Enable port filtering: whether to enable this function or not.
- Port Range: Set the range of port to be filtered, suppose it is 80 and when use protocol is Both or TCP, all computers will be unable to use the services of http (port 80)— will be unable to browse normal WebPages.
- TCP/UDP: Choose to either filter TCP or UDP, or choose to filter both.
- Remark: Remark field, you can write comments by yourself.

IP Filtering

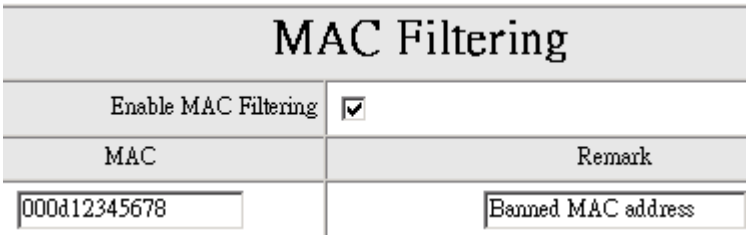
IP Filtering is to limit internal users from accessing the Internet.



- IP: Input the IP address that you want to filter; the limited IP address will be unable to transmit the data to the Internet.
- TCP/UDP: Choose to either filter TCP or UDP, or choose to filter both.
- Remark: Remark filed, you can write comments by yourself.

MAC Filtering

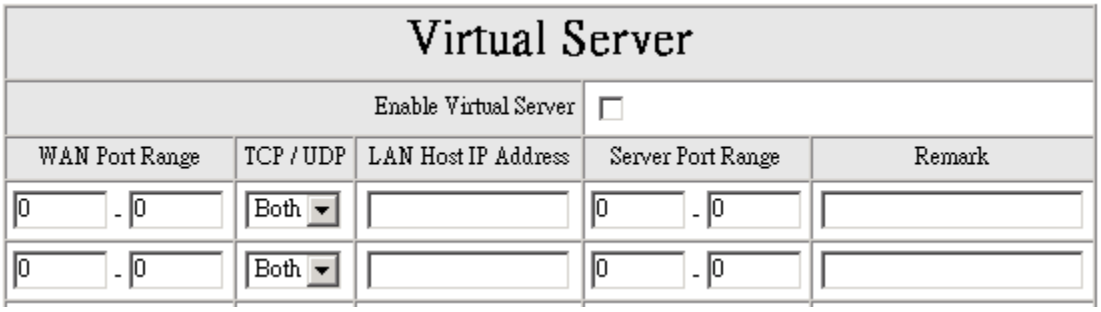
MAC (Media Access Control) address filtering is to filter the transmission of data by network card physical address.



MAC: input MAC that will limit accessing Internet PC.

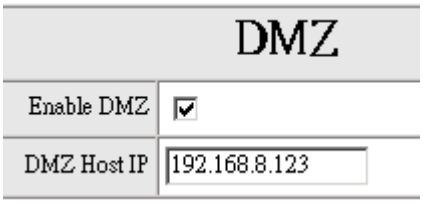
Virtual Server

Enabling the users on Internet to access the WWW, FTP and other services under your NAT. When remote user are accessing Web or FTP servers through WAN end IP address, it will be routed to the server at the internal LAN end and be routed to the server at the internal LAN end as appropriate in accordance with the externally required services



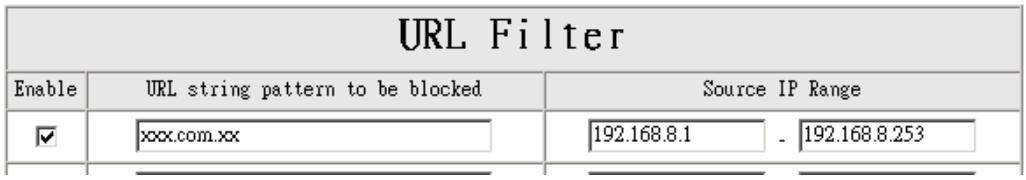
- WAN Port Range: Input the port number on the WAN side.
- TCP/UDP: Select the communication protocols used by the server—TCP or UDP.
- LAN Host IP Address: Input IP address that provides various services servers.
- Server Port Range: Input the port used by the LAN host.

DMZ



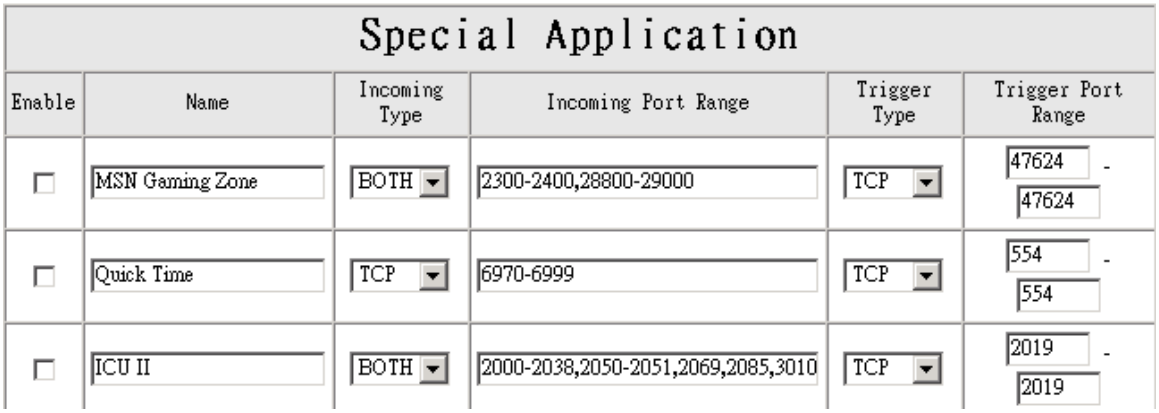
Lets the server on the LAN to be directly exposed to the Internet for accessing data. Either this function or the virtual server can be selected for use.

URL Filter※



URL filter is used to deny device from LAN accessing specific web sites. The system will block the URL that contains the string.

Special Applications※



Provide multiple connections for special applications.

- Name: The name of the special application.
- Incoming Type: The protocol used to trigger the special application.
- Incoming Port range: Port range on the WAN side that will be used to access the application.
- Trigger Type: The protocol used to trigger the application.
- Trigger Port Range: Port range used to trigger the application.

DoS Prevention Settings※

DoS Prevention Settings		
Enable DoS Prevention	☑	
Enable DoS Prevention on LAN	☑	
Whole System Flood	☑ SYN	50 (Packets/Second) [50 - 500]
	☑ FIN	50 (Packets/Second) [50 - 500]
	☐ UDP	100 (Packets/Second)
	☑ ICMP	50 (Packets/Second) [50 - 500]
Per-Source IP Flood	☑ SYN	30 (Packets/Second) [30 - 300]
	☑ FIN	30 (Packets/Second) [30 - 300]
	☐ UDP	100 (Packets/Second)

- Enable DoS Prevention: To prevent DoS from WAN.
- Enable DoS Prevention on LAN: To prevent DoS from LAN.
- Packet/Second: If the same packet type is more than the setting in one second, then it will be attacked. And VoIP gateway will block the IP if you checked “Enable Source IP Blocking”.
- Enable Source IP Blocking: Block the IP.
- Blocking Time: The time to block the IP.

Notice

※

These functions are only supported for the second hardware. The second hardware can support more functions, such as PPTP, LAN Interface Mode, LAN QoS, etc. There is an easiest way to make out the first and second hardware, please check Network Settings of User Interface. If there is LAN Interface Mode or PPTP in Network Settings, this model is the second hardware.

General

"IMPORTANT SAFETY INSTRUCTIONS - When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:
-Do not use this product near water for example, near a bathtub, washbowl, and kitchen sink or laundry tub, in a wet basement or near a swimming pool.
-Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
-Do not use the telephone to report a gas leak in the vicinity of the leak.
-Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
SAVE THESE INSTRUCTIONS"

Telephone line cord

"CAUTION: To reduce the risk of fire, use only No. 26 AWG or larger UL Listed or CSA Certified Telecommunication Line Cord"

END OF THIS DOCUMENT